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INAUGURAL ADDRESS*

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It seems that an inaugural address should be an informal talk, with the stress placed on the success of the previous administration, rather than a lengthy dissertation on the hopes of the future. I realize to the fullest extent the task imposed upon me by my confreres of the Louisiana State Medical Society in electing me to succeed my good friend, Dr. Joseph A. O'Hara, who has served the Society with such distinction during his administration.

It would be the height of ingratitude if I failed at this time publicly to thank the Louisiana State Medical Society for the honor that they have bestowed upon me in selecting me as the sixtieth president of the Society. The honor is one that I treasure, and I trust that my work for organized medicine during my incumbency will be of such a nature as to prove in no uncertain way my deep and lasting gratitude.

This Society has shown a normal growth from year to year, and it is my hope that I can reach in some manner every one of the physicians in Louisiana who have not affiliated with our organization. To that end I propose to visit in person every parish in the state, attend a meeting of every parish and district society, and make every effort to convince the rank and file of our profession of the benefits that can be derived from membership in the Louisiana State Medical Society.

The physicians of Louisiana work as a united and coordinated body striving to attain that common goal, the relief of suffering humanity.

From time immemorial the indigent sick have been regarded as the physicians' problem, rather than the responsibility of the community, where it justly belongs. From my own observations, there has never been a time when the physicians of Louisiana have side-stepped this problem. Speaking for the Society of which I shall soon be the head, I am proud to say that this policy will be continued, even though I know that on many occasions the privilege has been much abused.

The people of Louisiana are grateful to the doctors for their care of the indigent sick and the underprivileged youth; they are grateful to this body, the Louisiana State Medical Society, for its untiring efforts in maintaining the *entente cordiale* that exists between physician and patient, for they realize that severing this relationship will be the opening wedge of socialized medicine.

On this point I am optimistic, for I do not believe that the people will soon forget the services of the physicians, nor do I believe that the federal government can disregard the rights and privileges of organized medicine. This body is not militant, and has no desire to engage in verbal warfare with the constituted authorities.

In all matters in which there is a difference of opinion between the government and this Society, I believe that a personal contact is the only means of properly protecting our interests, and I shall be ready when this condition exists to make a visit to Washington and lay the matter before

*Delivered before the sixtieth annual meeting of the Louisiana State Medical Society on Tuesday, April 25, 1939, at Alexandria.

the proper authorities for an amicable adjustment.

At the proper time, I shall make every effort to have a physician appointed as a member of the State Hospital Board. While this board is functioning satisfactorily at the present time, with the aid and counsel of the Advisory Board composed of physicians, it will be to the advantage of this service to have a member of the Louisiana State Medical Society on the executive board. His intimate knowledge of hospitalization will be of great benefit in the deliberations of the board.

May I compliment the Woman's Auxiliary for the splendid service that they have rendered in the cause of organized medicine. This splendid band of women, in spite of great difficulties, has established an organization, of which we are justly proud, and I am relying upon them to continue their effective work during my administration.

The voice of the individual physician is heard through his chosen representative, the councilors and the executive committee; to you I look for guidance and advice; of you I ask cooperation. The component societies are my special charge and I will appreciate a report from each society as often as possible.

As a concluding tribute, I should like to say a word about the Past Presidents' Council. This organization is composed of men who have all received the highest gift within the power of the Louisiana State Medical Society, and having served as president really know the problems that confront the Society. I am depending upon them collectively and individually for guidance during my term of office.

The final words of the Oath of Hippocrates are: "While I continue to keep this Oath unviolated, may it be granted to me to enjoy life and the practice of the Art respected by all men in all times! But should I trespass and violate this Oath, may the reverse be my lot!" I have made few promises in this brief inaugural address, but those few I propose to keep as inviolate as the Oath of Hippocrates.

ANNUAL ORATION*

JUDGE WILLIAM H. BYRNES, JR.
NEW ORLEANS

I notice that I have been classified in the program of this convention as an orator. I assure you that I can lay claim to no such distinction. I wish, however, to express my gratitude at being given the opportunity of addressing a gathering of one of the most learned and scientific of all professions. I would not have accepted the invitation if I wished merely to deliver a speech. There are hundreds and hundreds of men in Louisiana who, by study, practice and natural gifts, are far better speakers than I am. I accepted it because I desire to discuss with you the most vital question that is confronting our nation at this time.

I hope to be able to reach this discussion by easy stages; so, therefore, I must first pay to this assembly of doctors, a heartfelt compliment. I do not believe that a more representative gathering of men, who, by study, training, experience, and habits of thought, are more capable of solving the problems that confront society than you are, if you will but consider it. Therefore, I am indeed glad to be here tonight.

I am also grateful for the opportunity of appearing on the same platform with the learned, energetic and efficient Dr. Joseph A. O'Hara, who retires tonight from the presidency of your organization. I have known Dr. O'Hara since 1904, when I returned from Georgetown University. I have personal knowledge of his ability, his unbounded charity to the poor of the district in which I live, to whom he has given his medical skill and learning during all of these years, without hope of financial reward, but merely to satisfy the desires of his great heart to alleviate suffering and help his fellow man. I know of no man whose personal life presents a more perfect illustration that the medical profession need not be regimented or socialized in order

*Annual oration delivered before the sixtieth annual meeting of the Louisiana State Medical Society on Tuesday, April 25, 1939 at Alexandria.

to care for the poor—the needy, the unfortunate members of our society.

So I say to you tonight that I am sincerely proud to be on this platform with such men as Dr. Joseph A. O'Hara and Dr. Jerome Landry, also my life-long friend. I wish that my ability was commensurate with their worth and the great intelligence of my audience.

Some sixty years ago, almost to the very day, the great statesman, William Ewart Gladstone, on April 5, 1879, delivered an address in Kibble Palace, to the faculty, students and friends of the University of Glasgow in which he dwelt on the then rising dignity of the medical profession.

"The medical profession offers at the present time, even to the uninstructed eye, an object of yet livelier interest. Here indeed, much is changing, but all in the direction of advance. The dominant activity of the age, addressed to conquest over nature, continually enlarges the knowledge and the apparatus lying at the command of the physician and the surgeon. There was a time when the writer of "Gil Blas" could represent his hero, who had been taken ill at an insignificant town, as having easily and rapidly recovered because by good fortune there was no doctor in the place. Such a reason, if any novelist could now think of using it, would slay nothing but his own reputation. The medical art is now universally recognized as having achieved much for the benefit of mankind and as being honestly and reasonably set on learning more."

And then, good old Gladstone continues, after many words of praise, with this statement, which I am sure will arouse your risible faculties. Think of this grand old gentlemen, saying in deadly earnest, of the speed and the hurly-burly of life in dear old Scotland in the year 1879, in the midst of the solemn and sacred precincts of old Glasgow University:

"The pace at which we live is quickened; the demands both on thought and emotion are heightened without any corresponding increase of natural force in the organs or faculties which are to meet these demands, while the mind asks so much more of the frail flesh, its halting partner."

What would the great English statesman say if he could appear on this platform tonight? First, I believe that he would be bewildered at the giant strides which medicine has made during the brief sixty years that have lapsed since he gave his address that night at Glasgow University. He would be completely astounded at what surgery is capable of doing in the service of mankind today. His imagination would be intoxicated at the truths which have been learned from scientific study on the human body. His wonder would be held captive by the achievements of such members of the profession as are gathered in this hall tonight. If this grand old statesman said, sixty years ago, that the pace of life was quickening, I am sure that he would be startled by the rate of speed in which we are now living. I think that there is but one phrase which describes it,—our daily lives are moving with "kaleidoscopic rapidity"!

What would he think of the marvelous instruments of your profession? The machines and the methods which are in daliy use, enabling the physician correctly and accurately to diagnose nearly all of the ills of suffering humanity. Indeed, gentlemen, I do not wish to flatter you, but certainly, no other profession has made such great advances in these short years as has been accomplished and achieved by the medical profession.

The learned Mr. Gladstone, on that same night, gave utterance to a fact, which the members of every profession should bear constantly in mind. I believe it is equally true concerning the medical profession as it is of the legal profession—and all other professions: "That greatness is scarcely compatible with a narrow concentration of intellect—even to one family of subjects."

He later says: "It is difficult, perhaps, for those to whom one pursuit and one set of subjects are to be their daily bread, to know how far they may, with safety, indulge in collateral studies; but there can hardly be a doubt as to the benefit of these, if they can be had. An absolute singleness of pursuit almost means a mind always in one attitude; an eye that regards every object, however many sided, from one point of view; an intellectual dietary beginning and ending with one article."

I have quoted this last statement of Gladstone for the reason that I desire to im-

press upon you the absolute necessity for you gentlemen of the medical profession to turn upon a social problem which, in my opinion, is the most important problem in our nation today,—a problem which must be solved. Your trained minds, your powerful intellects, and your habits of concentration are needed to help solve it. Unless it is solved, we cannot continue to exist as a nation. It is more important than war. It is the problem of unemployment.

I know that for the past few years there have been tons of literature written concerning socialized medicine,—the regimentation of doctors. There have been millions of words spoken in public addresses and over the radio and I am certain that nearly every doctor present here tonight could ably and intelligently discuss the pros and cons of this most absorbing question. Yet in all the magazine articles I have read, and all the addresses over the radio that I have heard, I have not heard a single person discuss the real cause of the agitation for socialized medicine, and the regimentation of doctors. The answer is simple. The cause of this agitation is unemployment. It seems to me then to be the sensible thing to attempt to eliminate the cause. Therefore, on this most important subject I beg of you to give the nation the benefit of your intelligence and your mental force and power, as well for the public good as for your own advantage.

I am speaking only as a layman. But I can positively assert that every human being with whom I have conversed expressed the highest regard and admiration for the doctors, and that all of those persons stated when they could afford it, they desired to be attended by the physician or the surgeon of their choice. It is such a natural statement, that it is impossible to contradict it or even to argue against it. The trust, the confidence, and you might add, the love and devotion between a doctor and his patient precludes the idea of any individual preferring socialized or regimented medical attention.

Remember, however, that you have in the United States tonight, as I stand here on this platform talking to you, more than fourteen million men and women without jobs. If you allow the very small and conservative average of three persons depending on each worker, we must admit the staggering total of upwards of fifty million of our population who have no money to pay for medical attention or to buy drugs, or anything else without government aid.

Now it follows that these people must have attention. The welfare of the nation, the prevention of epidemics, and every consideration of humanity requires that these worthy but unfortunate members of society must be treated. The only solution, therefore, which the government has been able to discover, is the socialization of medicine. I heard a young lawyer state his feelings on the subject very aptly. He said: "If I am in the army and I am wounded on the battlefield, I am, by force of necessity, obliged to receive treatment from the doctors which the army provides. I might like them; I might dislike them; I might have confidence in them; I might have no confidence in them, but still I must submit to their treatment. It is true, if it were possible, I would select my family physician, whom I have known since childhood, and, in turn, would be guided by him in the selection of a surgeon or any other specialist that my condition demanded."

I assure you the public bears no ill will to the doctors. On the contrary the average man or woman is most appreciative of the medical care and attention which he receives. So this question of socialized medicine is distinctly an economic one. It is a question based on stern necessity. People who are not working cannot pay doctors and dentists any more than they can pay the landlords and the butchers. So, gentlemen, in my opinion, it is not only advantageous to yourselves, but it is your duty, as members of society, to discuss the problem of unemployment and to give it your best thought in an attempt to put men and women back to work at a living wage.

Today unemployment is the fundamental evil of American society. We have reached the point when something must be done.

The government has already spent over eighteen billions of dollars in attempting during the past nine years to bring back prosperity. Nothing has been accomplished to afford permanent relief. The condition is getting worse each year. Permit me, for the next few moments, to call your attention to some salient facts which I think will impress upon you the seriousness of the present situation.

Today, according to the most reliable statistics which I can find, our unemployed citizens number more than fourteen millions. At the close of the colleges and universities, last year, more than 100,000 men and women reached degrees. What has become of these men and women? How many of them are employed? It is estimated only one out of fifteen! Again the figures of the unemployed do not include the professional men and women,—doctors, lawyers, dentists, engineers, surveyors, architects, accountants,—or the stenographers, trained nurses, and members of other professions whose incomes have been so reduced that they are practically unemployed.

It is manifest that we cannot go on each year decreasing the number of "jobs" by using labor-saving devices, and then expect to have enough jobs to go around. Yet most of our economists refuse to see this very obvious fact.

It follows then that if labor-saving devices are the real cause of our predicament, we must find some method of making the labor-saving devices provide work for the flesh and blood men of the nation. I submit for your thoughtful consideration a proposal or plan which I have been advocating for the past few years:

Classify machines into two general groups, those beneficial to labor, and those detrimental to labor. Compel labor-saving machinery or the detrimental class, which do work, which, prior to their invention was done by man, to pay to the national government one cent (or more if necessary) a day for each man's work done.

The work of more than five billions of men is being done each day in the United States, at the present time, by labor-saving machines. Therefore, the income from these machines would be thirty million dollars a day.

The national government should dedicate this fund to the doing of new work, work not now being done by private enterprise. In the doing of new work, again use labor-saving devices and again make them contribute in proportion to their man power. The more labor-saving devices used, the greater the fund, and the more new work which can be done.

The amount of new work approximates the infinite and can never be exhausted; thus, the labor-saving machines which do men's work would provide the funds with which to put men to work and keep them working.

Now let me ask you this question: How in the name of "common sense" can the number of people who are unemployed be lessened, if, each year the number of possible jobs are being decreased by the millions and at the same time each year, millions of new workers are added to the workers of our nation who must find work? Does it require an "Einsteinic" intellect to foresee the inevitable result? Unless some drastic steps are taken to make the labor-saving machines themselves create new work, the next decade will find in this country from thirty to forty million unemployed persons, and with each decade the situation will become worse and worse.

My plan or suggestion is very simple. I have received hundreds of letters from all parts of the United States approving it. It is this: Divide machinery into two main groups. In the first group, place all machinery or machines which do work that man can do, and produce or manufacture products that man can make by hand. These machines should be termed labor-saving devices and should be forced to contribute to the government a fixed amount per day, for each man's work done by them.

In the second group, place those machines which do work that man cannot do, or which produce or manufacture products which man cannot make by hand. Machines in this group would not be classed as labor-saving devices and would not be taxed or forced to make a contribution of any kind to the government, because these machines actually put people to work.

I think one illustration will convey to you what I mean by the foregoing classification. Men cannot generate electric cur-

rent by the use of their hands. Therefore, an electric power house that produces electric current, would be doing work that man cannot do and would be placed in the beneficial class. The current which these machines create, lights our cities, runs our street-cars, and operates our factories. Thousands of men and women are given jobs by the use of it.

Now, for an example of the labor-saving class of machinery. If I take the electric current which is produced in a power house and operate a drill with that current, and the drill is used to tear up the streets of New Orleans, doing the work that it would take twenty men to do, then the drill would be a labor-saving device, and the operator or user of that drill should be compelled to pay to the government a certain number of cents each day for each man's work done by it. For example: If the rate agreed upon was five cents for each man's work done, the operator of that drill would be obliged to pay the government one dollar for each day's work done by it. In America at this moment the work of more than five thousand million men is being done by strictly labor-saving machinery under the foregoing classification. A small tax of one cent per day for each man's work done would create the huge fund of fifteen billion dollars a year. Remember that it would be an annual income.

The money collected from the tax or contribution of these labor-saving machines would be used solely and only for the benefit of the workers of the nation. That is, it would be used to create new work, not now being done by private enterprise. The amount of beneficial new work which could be created approximates the infinite. For example: Here in our own City of New Orleans five hundred millions of dollars could be advantageously expended for the rebuilding of our poorer districts. Think of what a paradise you could make out of it. In the United States, more than a hundred billion dollars could be used for the same purpose.

In the doing of this new work, again use labor-saving devices; in fact, under my plan, the more labor-saving devices you would use, the greater the income would be. The greater the income, the more new work could be done, and thus more men and women given jobs. Why, undreamed billions of dollars could be spent in America for the benefit of our people and our country. Flood control, inland waterways, grade crossings, one hundred foot wide highways, great permanent levees from Cairo, Illinois, down to the mouth of the Mississippi river, —the extermination of pests, the reclamation of our swamps, and thousands and thousands of other projects. All classes of workers could be used. Hundreds of thousands of young men and women could be placed in research laboratories. If the money is forthcoming, it needs but little imagination to develop beneficial work for our people. Every man and woman in America who needed work could be given work at a living wage.

I firmly believe that the mere existence of a fund of this character derived annually, and from a source which would increase year by year, would cause millions of our workers to be drawn back into the natural channels of trade. If this should occur, then the surplus in this fund could be used for old-age pensions, unemployment insurance, free hospitalization, and other benefits for the workers of the nation. But not a cent should ever be diverted from the main purpose of the fund, that is, for the benefit of the workers. Make labor-saving machinery do the work of man, create new work for man, and thus permanently cure the unemployment situation in America.

I know that some persons may think that I am exaggerating the necessity for immediately creating new work. Read what Dr. W. W. Alexander, head of the Farm Security Administration, said just a few days ago, on April 13, 1939:

"FARM PEOPLE 'ON THE MARCH'
'TERRIFYING EXODUS' LAID TO MACHINERY."
(By the Associated Press)

"Washington, April 13—Dr. W. W. Alexander, head of the Farm Security Administration, said today a survey of major farming sections shows there is an 'almost terrifying exodus' of tenants, sharecroppers and small farmers who are being 'squeezed out' by machinery.

"Machines of all sorts—tractors, combines, corn pickers, cotton pickers, cane harvesters—are invading every section of the country, lowering the cost of production and destroying the demand for millions of hours of man labor," he said.

"The administrator's statement was made as Administration Farm officials studied legislative proposals designed to check the displacement of farm laborers. One proposal being considered would require landlords to pass a part of their government benefit payments on to hired help in the form of 'labor payments.'

"Dr. Alexander estimated that nearly 2,000,000 displaced farm people are 'on the march' following the crops from one section of the country to another."

It is important to remember that these farm workers have been recently displaced. They are on the march for what? Each community has thousands of idle hands. It is impossible for them to find work. These two million men, willing and able to work, are jobless. If my plan was adopted, they would be immediately given work at a living wage, and they, in turn, would create a market for the products of their farms, which, even with government benefits, are now barely able to exist.

These farm machines, which do the work of these men, would contribute their share, together with the millions and millions of other machines, to create new work, which, in turn, would enable their owners, the farmers, to sell the products which they produced. It requires no master mind to realize that you cannot sell to people who are not working.

Dr. Jesse Holmes, a great economist and lecturer, a month ago said in New Orleans "that in the year 1900, there were thirty machine men for every flesh and blood man. Today it is estimated that there are three hundred machine men for every flesh and blood man."

According to his statement, it is apparent that he estimates "machine" men are doing the work of fifteen billion flesh and blood men.

I have made my calculations on the estimate that labor-saving devices are doing the work of only five billion men. Suppose Doctor Holmes is correct (which he probably is, because I took the very lowest estimate), think of the huge income which the government would receive if he charged these machines but one cent a day for each man's work performed by them.

Something must be done. We cannot go on as we are now going. Government expenditures have reached the limit—a limit which cannot be exceeded without grave danger to the financial structure of the nation.

The government has taxed every possible thing which is capable of being taxed, except the right thing; the labor-saving devices or machines.

I must bring this address to a rather sudden close. I have already consumed the time allowed to me. As stated in the beginning of my address, I am grateful for the opportunity of bringing this problem to your attention tonight. It is your problem as well as the problem of every other citizen of our country. Put the "flesh and blood" men and women back to work at a living wage,—not less than a hundred and fifty dollars a month, and our financial problems will vanish. Your particular problem of "socialized medicine" will cease to exist when the condition which has caused it has been eradicated. I sincerely ask your assistance. Do not let the communists gain a foothold by spreading their vicious propaganda among these, our unfortunate brethren; brothers who have done no wrong, brothers who are asking merely for the inalienable rights guaranteed by our beloved Constitution, chief among which is the right to work in order to live and raise their families in accordance with the ideals of true American citizenship.

ANALYSIS OF THE HISTORY IN GASTRIC DIAGNOSIS*

OSCAR W. BETHEA, M. D.
NEW ORLEANS

While we, as physicians, should avail ourselves of every diagnostic method, there are no uniformly reliable criteria for the diagnosis of many gastric conditions. The physical examination may reveal very little. The roentgenologic study, though in-

*Read before the Orleans Parish Medical Society, October 10, 1938.

dispensable, may be of limited aid in the milder types of disturbances and even in marked gastric disease may fail to supply essential evidence or may even be directly misleading. The inadequacy of laboratory tests is being stressed in recent literature: For example, an active peptic ulcer may be associated with hypochlorhydria or with perfectly normal gastric fluid.

THE HISTORY

The purpose of this discussion is to present some suggestions in a somewhat neglected field, that is, an approach to the diagnosis by a study of a history of the case. The subject is too large to present in its entirety and, as will be noted later, only certain phases will be considered.

The family history is important as heredity plays a part here as it does in practically every phase of life. The environment may markedly influence the development of many types of gastric pathology. The active life that is characterized by high tension and sustained intellectual stress tends to hyperacidity, while the slower tempo more commonly results in hypoacidity.

Past illnesses and their sequelae are of much inportance. For example, chronic gallbladder disease tends to hypoacidity while chronic appendicitis or postoperative adhesions tend to hyperacidity. Diarrhea more commonly is an expression of reduced acidity as imperfectly digested food often gives rise to one of the food diarrheas. A history of gastric hemorrhage is quite suggestive of ulcer or malignancy. Dental defects, especially of the type that would cause imperfect mastication, by passing imperfectly prepared food into the stomach tend to develop a high acidity, apparently nature's effort to aid digestion. Just as a cinder in the eye causes a flood of tears, a foreign body (pieces of unmasticated food) seems to call out an excess of gastric fluid. Personal history details as to the excessive use of tobacco (hyperacidity), alcoholics (gastritis) or condiments (hyperacidity); fast eating and irregular eating habits (hyperacidity) should be investigated.

The history of previous studies and the findings may be quite informative. This applies especially to gastric analyses, blood pictures and roentgenologic studies.

Of major importance also is the history of previous therapeutic efforts and their results. For example, if the patient has been given hydrochloric acid and an accentuation of his discomfort resulted, our study is much simplified.

PRESENT ILLNESS

My purpose at this time is to present especially the analysis of the "Present Illness":

Duration of symptoms: For example a case of long standing is not suggestive of carcinoma.

Appetite: Hyperacidity favors rapid digestion, therefore, an early hunger reflex. Also as bland food may give relief, there is apparently a compensatory tendency to take food frequently. Hypoacidity usually means slow digestion and a late or imperfect hunger reflex. These patients frequently lose what appetite they may have, soon after the beginning of a meal. In carcinoma more or less complete loss of appetite is early and persistent.

Weight: In hyperacidity because of rapid digestion and large appetite, there is a tendency to gain. In hypoacidity with its reversed conditions there is a tendency to lose. When a well nourished, full-blooded patient walks into my office complaining of digestive discomfort, I think of hyperacidity. Shakespeare convicted one of his characters of hypoacidity with remarkable vividness when he said, "Yon Cassius has a lean and hungry look." In carcinoma there is a tendency to early, rapid and progressive loss of weight. In evaluating weight changes we must always take into consideration dietetic efforts at therapy.

Weakness: Hypoacidity with its imperfect digestion and limited assimilation not only tends to loss of weight but to general weakness. In carcinoma this is usually rapid and severe.

Character of discomfort: This datum is often difficult to obtain. In hyperacidity,

especially if there be a peptic ulcer, there is usually a distinct pain that is described as burning or may be called cutting or sticking in character. In hypoacidity the sensation is rather one of discomfort and is described as a sense of weight or fullness or pressure; one patient has swallowed a hot coal or a paper of pins, the other a brick. In carcinoma the pain is more constant and less related to the intake of food or to other factors.

The onset of discomfort: In hyperacidity it usually appears from one to three hours after meals, that is when the stomach has more or less emptied and is awash with acid gastric juice. In hypoacidity discomfort is usually felt soon after meals as a result of the presence of material that the viscus is unable to handle.

Duration of discomfort: In hyperacidity it usually persists for several hours or until the taking of bland food or of alkalies or the removal of the acid secretion through emesis. In hypoacidity it usually lasts until the stomach has sufficiently emptied—the time of this, of course, depending upon the character and the amount of food taken and the condition of the patient.

What precipitates discomfort: In hyperacidity it may be the taking of acids or sweets, a delayed or missed meal or any factor that results in the presence of undiluted acid in the stomach. In hypoacidity discomfort follows the taking of a sufficient amount of solid food, in other words, it develops as the result of a full stomach.

What relieves the discomfort: In hyperacidity it may be the taking of bland food or alkalies, or emesis. In hypoacidity it may be avoiding any large amount of food or the taking of acids or emptying the stomach by emesis.

Heartburn: I refer here to the burning discomfort in the epigastric region that has a tendency to be referred upward along the course of the esophagus. This is often found in hyperacidity because the frequent presence of highly acid gastric secretion sooner or later may develop an irritated mucous membrane and discomfort may result when this surface is in contact with the hyperacid content. This usually occurs from one to three hours after meals. Heartburn is not so often a symptom of hypoacidity.

Regurgitation: In hyperacidity the material brought up is usually burning in character, may "set the teeth on edge" or irritate the posterior pharynx. The material is usually liquid in character. This regurgitation occurs approximately two or three hours after eating. In hypoacidity the material brought up is generally more or less unchanged food. It is not burning in character but may be "sour." It tends to occur soon after eating.

Emesis: In hyperacidity it is more apt to be burning, liquid material. In the presence of ulcer it may contain blood. In hypoacidity it is usually food more or less unchanged. It may have a sour, disagreeable taste. In carcinoma the vomitus tends to have a foul odor and may contain the characteristic changed blood. It is usually not burning in character as about 75 per cent of these cases do not have any free hydrochloric acid.

The eating of acids: In hyperacidity you can usually obtain a history that acids precipitate or increase the discomfort. Sometimes the patient tells us that he does not eat them without being able to explain why. Nature seems to have robbed him of a desire for that which would cause discomfort. Often we find that some fruit acids, such as grapefruit juice, may be fairly well tolerated. In hypoacidity acids are usually taken with comfort. The patient often "craves" them.

The eating of sweets: In hyperacidity these often precipitate or increase discomfort. As in the case of acids, the patient may give a history of avoiding this type of food without knowing why. In hypoacidity sweets are usually well tolerated though certain items such as syrup may disagree. The usual complaint, if any, is that they "sour on the stomach."

Headache: This is one of the fairly constant findings in either type of stomach disorder. In hyperacidity it may be of the

type of migraine, in fact some of us believe that a fairly large proportion of the attacks of migraine are precipitated by hyperacidity. The tendency is for the headache to be acute. It is often associated with nausea and usually develops when the stomach is empty of food. It tends to come on during the latter part of the morning or the latter part of the afternoon. It may wake the patient during the night or the patient may wake with it in the morning. In hypoacidity the headache is usually of the "dull" or "sore" type. It tends to develop soon after meals and subsides as the stomach empties.

Diarrhea: In hypoacidity there is a distinct tendency to diarrhea, the dejecta usually containing more or less undigested food.

This history study may look rather formidable and much time may be spent upon it, often to advantage. In the average routine study these sixteen divisions frequently may be thoroughly covered in a very few minutes. For example, the question is asked "Do you have headache?" The one word headache appearing in the history. If the answer is "Yes," we shall have to determine the type, but if the answer is "No," one of the most important questions of our study has been closed in a few seconds.

CONCLUSION

Even when the gastric analysis reveals normal acid values, treatment based on a history such as has been suggested here may give relief from many distressing symptoms.

DISCUSSION

Dr. Daniel N. Silverman (New Orleans): The discussion of history in the diagnosis of gastric disease is always timely but it is very difficult often to interpret symptoms which cover such a large field as in gastro-enterology.

I always feel better when a patient comes with a long history because I feel the prognosis might not be so bad and also that the patient might not expect a cure, having seen so many doctors before me. However those are important symptoms, question of the long and short history in diagnosis of gastrointestinal disease. Before the middle age period, it has been moved to forty and fifty recently, symptoms of gastric disturbance usually have neurotic origin. However, we must not lose sight of of the fact that in later life the functional disturbance in a neurasthenic individual may become an organic disease. Carcinoma, for example, may have many years of disturbance or gastric distress. In a small series I have had (only five cases) they complained of stomach trouble from four to nine years. They had no demonstrable lesions during that period of time and subsequently died of carcinoma of the stomach.

Recently the gastro-enterologist and others have been awakened by the frequency of acute chronic gastritis as demonstrated by use of the gastroscope, through the ingenuity and enthusiasm of Schindler. It is thought that this diseased group is attended by epigastric distress, principally fullness and distress soon after eating. Borland told me that a great majority of his patients of that type complained of definite fullness and distress just after the ingestion of food. I believe that most of the gastric symptoms that our patients give are due to a motor disturbance rather than to the decrease of acidity which they have and which is determined by gastric analysis.

I am not so definite as Alvarez who says there is no need to make a gastric analysis because it does not help us. I feel that at least it tells us whether to give alkalies or acids in these cases. The difficulty today in our branch is that we know so little about the normal function of the gastrointestinal musculature that whenever we do get the symptoms we are unable to interpret the findings.

Dr. A. L. Levin (New Orleans): The analysis of facts in the history of gastric disease discussed by Dr. Bethea, requires further elucidation. I wish to lay particular stress on some statements commonly made by patients with gastric complaints. Heaviness, fullness, and bloatedness are frequent complaints. In the majority of cases, in my experience, it has no particular relationship to gastric acidity or to the type of gastritis. It is commonly met with in patients who are habitual belchers, a form of a habit neurosis; those patients are air swallowers and their cardiac end of the stomach is always distended with air, particularly after meals; the quantity of air swallowed is often considerable. Their gastric acidity may be absent, low, normal or elevated. The history is characteristic. As a rule, they belch often, loud, at will, independent of meals, and it is tasteless. Under the fluoroscope one can easily recognize the true state of affairs. They are never cured by alkalies, diet or what not, but by suggestion. Explain to those patients that they have formed a bad habit, advise them to discontinue it and teach them to put a cork or any other small article between the upper and lower jaws when the desire to belch comes on, swallowing is then impossible. I have relieved many professional belchers, as I call them, by this

simple suggestion. Chronic belchers, I believe, are liable to develop duodenitis, gastritis, and cardio-esophagitis as a result of that frequent forceful mechanical reverse peristalsis.

Dr. Bethea spoke of heartburn as a result of hyperacidity. I am sorry to disagree with him on this point. Heartburn is a misnomer in medical nomenclature. I would suggest the term "hyperesthesia," buccal, lingual, esophageal or gastric. The terminal nerves in a particular area become hypersensitive. The origin of it is still speculative. Chester M. Jones is of the opinion that it is due to increased intra-esophageal pressure. I do not agree with him. How would he explain on this basis the buccal and lingual forms? I am inclined to believe that it is caused by a biliary factor. It is more common in cases of biliary disease and most patients with pyrosis have a low gastric acidity and infrequently total absence of hydrochloric acid. I have relieved many an achylic patient suffering from pyrosis with hydrochloric acid. There is a definite correlation between chronic cholecystitis, hypochlorhydria and pyrosis.

I also want to call your attention to another important complaint in the history of gastrointestinal disease. Whenever a patient complains of weakness, loss of appetite, loss of weight, abdominal discomfort, or periodic pain associated with diarrhea, make an effort to rule out definitely malignancy of the colon, especially if anemia is present and the patient is of cancerous age. I came across several such patients recently, two of whom were only in the third decade of life. Malignancy of the colon is quite common; be on your guard in the presence of above symptoms.

THE HISTORIC DEVELOPMENT AND MODERN APPLICATION OF ARTIFICIAL FEVER*

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The employment of thermal measures for their therapeutic value to the human is so old that its origin cannot definitely be traced. Historians generally agree that medicine first became an art among the Egyptians. Hippocrates[22] (460-375 B. C.) may be accredited with the honor of elevating the medical profession to a science. He was an early advocate of clean air, clean food, and clean bodies. He introduced into Greece the bathing custom of the Egyptians and had baths attached to the gymnasiums. He employed hyperthermia and found it useful in treating insane patients having paralysis. Later to others,[22] Galen, Boerheave and Sydenham, came the definite knowledge set forth by "the Father of Medicine."

Chinese, Egyptians, Javanese, Jews, certain negro tribes of South Africa, and Indians of North America from early times have regarded balneotherapy as a valuable therapeutic agent. However, its use by the ancients was so enshrouded in superstitious rites and practices or in gratifying their desire for social pleasure that we find it impossible to ascertain its true origin. Their knowledge of the healing arts might be classed as empirical, the true worth of hyperpyrexia being unknown except as an eliminative agent which promoted good health. Few records being kept of the diseases of these ancients, the fact that hyperpyrexia was used by them is of doubtful value to the modern physician.

Some who claim to be authorities on the subject endeavor to maintain that the early employment of artificial fever was not induced by any desire or need for therapeutic benefit. While I do not presume to decide the worth or worthlessness of this statement, it is known that, by law, the use of the Roman public bath before two p. m. was restricted to the sick.[1] I have also cited the remarkable experience of the most celebrated physician in treating the mentally sick.

The Greek made nature his confederate. No other race was more keenly alive to its physical well-being. In beauty of body, the Greek was peerless, and in this beauty lay the foundation of his strength. He was more complete in his nervous system than any other man in antiquity. It seems natural, then, that the Greeks should be the first to convert their thermal springs into capacious baths.

History records the dissemination of Greek customs and culture westward. Consequently, after the Roman Conquest, 146 B. C., Roman civilization with its marked aspect of physical prowess began, too, to

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use the public bath. Originating among their primitive ancestors from their fondness for plunging into mountain streams, nature's bathing places were gradually replaced until Roman bath houses became elegant structures, fine examples of Roman architecture, extending over several acres of ground. Agrippa (10 B. C.-44 A. D.) built magnificent baths near the Pantheon. Titus (40-81 A. D.), Caracalla (217 A. D.) and Diocletian (305 A. D.) vied with each other by trying to win public favor by their splendor. Even today in their present ruined condition, these thermae excite the wonder and admiration of posterity.

Within these structures, the walls were decorated with marbles, statues, mosaics, and historic paintings. They were provided with washing rooms, courts for games, hot and cold baths, vapor baths, swimming baths, and hot-air baths. In the time of Diocletian, the Roman bath houses had a seating capacity of 18,000.[33]

The baths [1, 22, 33] have also been classed as the tepidarium, or tepid; the calidarium, or hot; and the frigidarium, or cold. These were generally taken in succession. After the bather had been raised to a sweating heat, cold water was then poured upon him as he entered the frigidarium.

With the building of the aqueducts, bringing an abundant water supply to Rome, warm baths came into general use. Italy and distant provinces were not slow in discovering hot and mineral springs within their borders. Famous watering resorts of France, Switzerland, Italy and other European countries today can attest their names to Roman origin. One, the famous Baiae, is now in ruins.

Baiae, like many others, succumbed to the inevitable. Winehouses in connection with the thermae encouraged dissipation and the easy indulgence which encourages social abandon. Thus bathers soon fell victim to licentious habits. Unlike the Greek, decency in the Roman bath was maintained for a period by a double suite or apartments, one for each sex.

The Greek and Roman differed in their appreciation of the bath. To the Greek the gymnasium took precedence, while the Roman regarded the gymnasium as a part of the bath.

In the Middle Ages, customs changed, and the complexities of living brought degeneration in the practice of bathing. From the holy practice of Hippocrates, the thermae had fallen so low that they had become almost nothing more than a meeting place for sensuous indulgence. Then, too, the invasion of the Huns[33] who cut the aqueducts, made further use of the public baths impossible.

Among the Egyptians and most of the early nations, the priests were the practitioners of the healing art. The Jewish priests were also physicians. Although their treatments were often accompanied by various ceremonies, at the same time they enforced judicious regulations to promote personal cleanliness and to avoid sources of contagion.

Among the Indians,[1, 22] bathing, especially in rivers, was practiced. Some tribes in the Rocky Mountains found that hot sweating baths, followed by a cold plunge, were beneficial. Many of the natural hot springs in Nevada, California, and other volcanic regions of the West, are still in use. Some tribes of the extreme north enjoyed vapor baths in huge mud boxes on the edge of a river. Others used tents and steam was raised by means of hot stones or jugs of hot water. The western Indians bathed in a sort of oven, and produced copious sweating by pouring water over hot stones. The Indians of the frontier used a wicker basket covered with skins.

Hot poultices and fomentations have been employed extensively both in ancient and modern times. Sulphur fumigations were among the kinds of ancient baths employed.

Hippocrates, it has already been stated, wrote much of the good effects to be derived from hot baths by preserving health and curing diseases. Galen[22] placed water high in the ranks of materia medica. Celsus[21] prescribed sweating baths, especially for pains in the joints, hysteria, dropsy, convulsions and diseases of the kidney.

There is definite authentic evidence to

prove that heat has been used for therapeutic purposes since the earliest days of medical history. Homer (850 B. C.), and Chinese writings of four thousand years ago are evidence of this fact.

In the field of hyperpyrexia, I will consider its administration first, by chemical or pathologic methods and, second, by physical methods, sometimes known as external and penetrative methods.

PATHOLOGIC METHODS

I have listed, but not in order of their evolution, a number of foreign substances which have been used in the production of hyperpyrexia with varying degrees of success in the treatment of disease.

1. Inoculations of organisms from malaria,[26, 67, 87] undulant fever,[64] rat-bite fever[80] and erysipelas.[88, 89]

2. Non-specific agents such as milk and its proteins,[37, 57] gelatin[40] and peptones.

3. Nucleoproteins which include vaccines of typhoid, dysentery, colon, cholera, meningococcus, staphylococcus, pyocyaneus, streptococcus, pneumococcus, and mixed vaccines.[37, 84, 88]

4. Bacterial extracts and related products, such as tuberculins,[20, 84] Coley's fluid, phylacogens and bacterial autosylates.

5. Crystalloid and colloid substances.[57, 75]

6. Miscellaneous substances, such as subcutaneous injections of turpentine, formalin, and the introduction of foreign material as horsehair which causes the formation of fixed abscesses.[56]

The nineteenth century was marked by advancement in methods of treating by means of artificial fever and the results obtained were so phenomenal that its use soon became an established practice.

Credit for the introduction of malaria therapy is usually accorded Wagner von Jauregg,[85] but now it is conceded that Rozenblum[66] of Odessa was the first. He published this fact in 1876, forty-three years prior to von Jauregg's successful experiments along this line.

Since 1918, malaria therapy's advent into the field of treating paretics, it has been used extensively in Europe and America. Its almost universal usage was attained in such a short time principally because its clinical use requires only simple procedure.[73]

The writings of von Jauregg in 1887 suggested the use of malaria for treating general paralysis, but it was not until 1918 that he began inoculating patients with the disease. For a period since then, malaria therapy was generally approved. Later it was discovered that the disadvantages of its use outweigh its advantages. Infection of patients with a new disease increased the mortality range to 23 per cent with an average of 12.7 per cent. Serious complications arose, resulting in irreparable injury to the vital organs. The desired malarial strain was not always available. Once injected, it cannot be controlled as to degree or duration. Malaria therapy excludes all other forms of treatment. In communities where malaria is endemic, the use of malaria therapy is precluded because approximately 25 per cent of the population possess an immunity to the disease. Beneficial reactions are therefore minimized if not altogether disparaged because of the hazards involved.

While the modern use of artificial fever began with Wagner von Jauregg, history is replete with the names of others whose contributions have helped place this form of therapy on a scientific basis. Dubuisson,[21] in 1816, described temporary remission of several years' duration in general paralytics in whom artificial suppuration had been produced. Jacobi[32] is quoted by Ironside as having treated general paralytics as early as 1854 by means of fixed abscess with associated laudable pus. Mobille[50] in 1852 and Trilat[83] in 1854 had a similar success. Meyer,[49] in 1877, used Autenrieth's ointment for producing suppuration in the treatment of this disease. Koster,[67] in 1848, in a series of twenty-four patients with mental disease, cured seven by intermittent fever. Mottschudoffsky,[67] in 1876, injected twenty-two patients with chronic mental disease with relapsing fever, and eleven were cured. Nasse,[52] in 1890, noted remission of symptoms in general paralytics following intercurrent malaria. Later he re-

ported that of twenty-one insane patients who suffered from typhoid fever, ten were cured of their mental condition. Von Jauregg, in 1890, treated patients with a combination of tuberculin and mercury, some of whom had complete remission. Later he employed typhoid, staphylococcal and streptococcal vaccine. In 1912 he also used milk, egg albumin, peptone, and sodium nucleinate.

PHYSICAL METHODS

The difficulties encountered through the use of pathologic methods in producing hyperpyrexia have led to continuous search for a more satisfactory method of raising the patient's temperature for therapeutic purposes. The result of these has led to the reinstatement of the physical method long lying dormant in the Columbia Journal and to its development to meet the needs of hyperpyrexia today.

I am listing here in chronologic order the names of those whose pioneer work has been of inestimable value to us.

1. The use of hot baths by Phillips,[61] 1883; by Weichbrodt and Jahnel,[91] 1919; Schamberg and Rule,[69] 1926; by Schamberg and Tseng,[71] 1927; by Rosanoff,[65] 1927; and by Mehrtens and Pouppirt,[45] 1929.

2. The use of heated air by Walinski,[90] 1928.

3. The use of high frequency diathermy currents by Neymann and Osborne,[55] 1929, and by King and Cocke,[36] 1930.

4. The use of radiothermy by Whitney,[93] 1928; Hosmer,[31] 1928; Carpenter and Page,[13] 1930; Hinsie and Blalock,[30] 1931, and Bierman,[4] 1932.

5. The use of ordinary electric light cabinet by Kahler and Knollmayer,[34] 1929.

6. The use of electric blankets by Wilgus and Lurie,[94] in 1931.

7. Electrically heated humidified hot air cabinets by Berris,[3] 1933; by Schmidt,[72] 1933; Simpson, Kislig and Sittler,[76] 1933; and Simpson,[77] 1934.

8. The use of short wave electric field (f-12,000,000) which produces heat in the living tissue by electromagnetic induction by Merrimann, Holmquest and Osborne,[47] 1934.

CLASSIFICATION

There are but two kinds of heat employed in the production of artificial fever. The type of apparatus used applies either the principles of internal or penetrative heat or those of external heat. Heat applied to the skin by convective measure heats the underlying tissues by conduction. Therefore, all methods of producing hyperpyrexia may be classified as external or conductive or as internal or penetrative heating agents.

To the class of penetrating heating apparatus belong the long wave diathermy, short wave electric field (radiotherm), and electromagnetic induction (inductotherm). These agents use electrical energy which is absorbed by the tissues and transferred into heat. Appliances which use partly penetrative heat and partly external heat belong to the same classification. Examples of the latter are diathermy machines built into hot air and electric light cabinets and radiotherms combined with hot air blowers for the purpose of keeping the patient dry and surrounding him with an atmosphere of hot air. To the class of external heating agents belong such methods as hot water, the electric blanket, air cabinets heated by incandescent bulbs, and cabinets regulating a current of hot humidified air over the patient.

Neymann and Osborne,[54, 55] in order to ascertain the exact temperatures of different parts of the body, constructed thermocouples and soldered them into spinal puncture needles. They observed that the temperature at the depth is about two degrees warmer than the subcutaneous temperature at the thorax and abdomen and that the more distal the thermocouples are inserted, the less the temperature of the subcutaneous surface. The subcutaneous temperature of the ankle may be as much as three degrees lower than the subcutaneous temperature of the abdomen. The skin surface temperature is lower over protruding and markedly curved parts, such as the nose, ears, fingers, and toes.[6,14] It is higher over muscles than over bones and tendons. Every application of penetrating heat maintains the same ratio between the interior

of the body and the subcutaneous surface. In the application of external heat, an inverse ratio is true. During external heat induction, the temperature of the internal organs is lower. When the height of temperature is reached, and the temperature is gradually lowered, the difference between the two medians has become equalized. Likewise, in the application of internal heat, the temperature of the skin has a tendency to rise because the capillaries expand in their endeavor to cool the body. However, the temperature of the skin never exceeds that of the interior.

It has been shown[53] that the reversal of the normal physiologic heat gradients makes little difference to robust patients but others may be poor risks because application of external heat to the surface of the body has a marked tendency to upset the heat regulating mechanism, thus causing heat stroke.

BALNEOTHERAPY

In 1883, Phillips[62] visited Hot Springs, Arkansas, and by immersing himself in hot water, demonstrated that the human body can be raised to a temperature of 103° F. He observed that this procedure increases both pulse rate and respiration.

In 1919, Weichbrodt and Jahnel[91] showed that scrotal syphilitic chancres in rabbits healed more rapidly than usual if the animals were placed in an incubator heated to a temperature of 104° F. Twice daily for thirty minutes, this height was maintained, and the treatment continued for a period varying from three to five weeks. After the second day, the spirochetes gradually lost their motility, became less and less in number and finally disappeared.

Schamberg and Rule,[70] in 1926, demonstrated that hot baths will not only prevent the appearance of experimental syphilitic lesions in rabbits inoculated with virulent treponemas but will also cause testicular syphilomas and secondary syphilitic ulcers to disappear.

Schamberg and Tseng,[71] in 1927, reported favorable results in the treatment of syphilis in human beings while employing this method of immersing the patient in hot water.

Mehrtens and Pouppirt,[45] in 1929, employed hot baths in the treatment of syphilis of the central nervous system and report favorable results. By means of hot baths they were able to elevate to a temperature of 105° F. or more and maintain this elevation for two hours. They proved that oral temperatures are inaccurate and misleading. During the bath a thermocouple was required to obtain accurate rectal temperatures. This method is a great improvement over all others previously in use in that the benefits to the patient are in proportion to the height of the temperature, elevation, frequency and duration of the baths.

A survey of literature seems to conclude that most of these investigators rediscovered a method of curing syphilis by physical measures and that this method had the same general characteristic of one described by Phillips in 1883.

The Japanese in the seventeenth century were the first to employ artificial fever produced by physical means in the form of balneotherapy for mass treatment of syphilis, arthritis, and gout. The efficiency of this method has withstood the test of time for the Japanese are still employing this method. Small individual tanks are placed in the large pools for individual convenience to the patient. If the water happens to be too hot for the particular bather he stirs it with a wooden paddle till it reaches the desired temperature. These baths are usually taken at a temperature between 113 and 128° F. The body temperature is elevated to at least 102.5° and often 104 to 105° F. is attained. The artificial fever continues for some time after the patient has left the bath, then gradually recedes, becoming normal in about half an hour. Patients take three to five baths each day during their course of treatment and experience distinct beneficial results. The general opinion is that hot baths are a valuable therapeutic aid in diseases influenced by a comparatively short period of fever. When it is desired to maintain the

fever several hours the patient may experience distressing and debilitating effects. The technic is not simple. The patient must be under constant observation and certain dangers are always present in this type of hyperpyrexia.

However, Lemoine[43] uses hydrotherapeutic measures in treating his syphilitic cases. He submerges the patient up to the neck in a tub of water for ten to fifteen minutes at two day intervals. The temperature of the water ranges from 100 to 112° F. The temperature usually elevates the body temperature to 104° F. His results obtained are short of miraculous.

Although the induction of artificial fever by balneotherapy appears to be an easy and practical method, the contrary is true. It is fraught with dangers, and must be constantly supervised and regulated by physicians and nursing personnel. Hot baths have an injurious effect on the functioning mechanism of the skin. The regulation of the internal temperature of the body is accomplished for the most part by an interplay of the circulation especially in the capillaries of the skin. These, in turn, are controlled, by the nervous system. Hot baths for the production of controlled fever are only of historic importance.

DIATHERMY

Neymann and Osborne,[50] utilizing the discovery of d'Arsonval[15] that high frequency currents produced heat in living tissue, employed a current of 1000 kilocycles (300 meters) as generated by the ordinary diathermy machine to produce artificial fever. They observed that sufficient heat could be induced within the body if means were taken to prevent heat dissipation. The technic consists in covering the greater part of the chest, back, and abdomen with large metallic electrodes. These are then attached to the two terminals of the d'Arsonval current. The electrodes first used to convey the current to the body were flat tinfoil type. The nature of their construction caused a concentration of heat along the edges which had a tendency to produce burns. After experimentation Neymann adopted a fenestrated electrode similar to the ones used by the Germans. This type of electrode by its increased length in proportion to its area minimizes the hazard from burns. The fenestration also decreases the so-called "edge effects" and is therefore more comfortable. In order to maintain close contact between the electrodes and the skin, a large jacket is firmly laced about the patient. Even with this precaution, contact may be broken by movements of the patients and burns may result.

While any of the well-made high frequency machines could produce sufficient current to elevate the body temperature, the average machine of former construction required, in some instances, two and a half to three hours to elevate to the desired temperature of 105 to 106° F. This slow induction is an exhausting experience to the patients. To offset this objection, machines of greater capacities were built. These are capable of delivering under load not less than 7,500 ma. and 100 volt and a frequency or 500 to 1,500 kilocycles. With a machine of this type, it is possible to elevate the temperature to the required degree within one hour's time.

When amperage greater than 4,000 ma. is needed to elevate the temperature, it has been found that an anterior electrode of divided construction is more desirable. This split electrode consists of two segments conforming to the surface of the chest and abdomen. It is so shaped that it avoids the edges of the ribs and the iliac crests. The leads from each segment of the electrode are connected to a rheostat. In this manner the amount of current passing through each part can be regulated accurately according to the varying resistance of the part.

It is necessary to encase the patient in a number of rubber sheets and blankets in order to maintain artificially induced temperature and to prevent its dissipation from the body.

Since the perfection of this type of machine, we are able to control the intensity and duration of heat elevation. Thus patients who require different degrees of artificial fever can be treated and our goal

in using hyperpyrexia for other therapeutic purposes is more nearly approached.

There are, however, some disadvantages in this method. In the early days before the present technic was perfected, burns were common, this being due to breaking of contact between the patient's skin and the electrode. Another disadvantage is the uncomfortable feeling of constriction and respiratory oppression which resulted to the patient from wearing of a tight jacket or binder and the heavy covering of blankets. The technician or attending physician is unable to observe the skin beneath the electrodes or manipulate the heavy covering in such a way that he can take blood pressure, make examination, or adequately care for the physical needs of the patient.

The scientific experiments of Epstein and McHugh,[24] and Osborne, Stafford and Markson,[58] have brought into use a modified form of the old diathermy technic which has encountered phenomenal success. This is because the undesirable features of the old were eliminated in the embodiment of the new. They have substituted for the old large ventral and dorsal electrodes those segmented in bracelet or cuff fashion, thus making them adjustable to any desired size. The electrodes are five in number; the large one encircles the abdomen just above the hips and below the lower ribs; the others encircle each arm and thigh.

This change allows for easy flexion of the muscles and excursion of respiration. Skin burns are infrequent. The length of treatment and the number of milliamperes is greatly reduced. The patient is more comfortable than when undergoing treatment with the older type of electrodes.

A celotex box fitting snugly over the patient provides proper insulation and keeps the patient under constant surveillance.

The use of this method of diathermy may be regarded as highly advantageous. Diathermy has been found effective in producing the required degree of heat for prolonged duration. The study of other methods of inducing hyperpyrexia, however, will show that the objections to the use of diathermy are sufficient to discontinue its use in favor of more effective means.

RADIOTHERM TYPE FEVER CABINET

Like all apparatus for producing artificially induced fever, the origin and evolution of the short wave machine (radiotherm) is interesting. Dr. Whitney,[93] of the General Electric Company, observed that men working in the concentrated short wave radio field always ran a slight fever, a little over 99° F. The company built several of these machines for experimental research and lent them to different clinics throughout the country. The unit was never put on the market for general use due to the fact that it was discarded because of inherent faults that are found in the elaborate and exacting tests which the company made with it. It was found that this type of apparatus was unsafe,[58] impractical, and too costly. This machine uses an oscillating current set up between two condenser plates. This current in turn produces an electrostatic field. The patient is placed in this electrostatic field, and currents are set up which raise the temperature of the body.

Due to the characteristics of the electrostatic field it was soon discovered that where beads of perspiration formed there occurred a distortion and a concentration of the field, often resulting in blisters and burns. It was not practical from a medical viewpoint on account of the initial cost and the complicated construction which required a highly trained personnel for its operation.

Carpenter and Page[13] removed most of the dangers of arcing and burning which are caused by excessive sweating. A large hood, or celotex cabinet envelops the patient with the exception of the head. A hot air blower heats the air within. Bierman, et al,[4, 8] employed the radiotherm method for several years in preference to all other thermal methods of treatment. They have also developed a device which adds to efficiency of the apparatus, the function of which is to raise the temperature of a localized area of the body above that of the entire body. With the patient in place between the condenser plates of the radio-

therm, an electrode is induced into the vagina; this, in turn, is connected through an ammeter to a small auxiliary metal plate suspended near one of the large condenser electrodes. With this technic it is possible to develop temperature reading between 110 and 116° F. as indicated by a mercury thermometer inserted in the vaginal electrode.

Advantages of the radiotherm are: First, it is better than conventional diathermy for treating stout people because it is less destructive to fatty subcutaneous tissues; second, it is possible to elevate the temperature to 110-116° F. in localized areas while producing systemic fever; third, it is a penetrative heating agent.

Disadvantages of the radiotherm are: First, the initial investment is costly; second, by some it is considered not a rugged apparatus capable of withstanding long continued use; third, high frequency currents must be discontinued when rectal temperature is taken; fourth, distortion and concentration of current occurs when beads of perspiration form on the skin. Superficial burns are often produced, due to concentration of current; fifth, a highly trained personnel is essential.

NEW TYPE OF RADIOTHERM

Since the first radiotherm was developed by Whitney in the General Electric Laboratories, many short wave machines have been constructed. These produce electrostatic field wave lengths varying from 2.5 to 40 meters. Most of the machines use oscillating vacuum tubes but a few use spark gaps.

Some manufacturers extol their own product, a machine having a particular wave length, and since many physicians specifically recommend certain wave lengths for accomplishing certain results, unsubstantiated and extravagant claims have been made for the endemic bacterial action of each wave length. When a physician decides to elevate systemic temperature to a degree sufficiently great to kill gonococcus, he turns on the gonococcus wave length while the Treponema pallidum is killed by its own determinate wave length. As a matter of fact many of the short wave machines characterized by an electrostatic or dielectric field are inefficient in their heating capacity as they merely heat the surface tissues.

Improvement has been made upon the newer types of radiotherm. This has been accomplished by arranging the electrodes in the same plane above or below the patient. The advantage is that the initial investment compares well with other types of high frequency apparatus for producing artificial fever. The disadvantages are: First, arcing and burning of the skin are evident as the result of concentration of the short radio waves in the drops of sweat; second, occasional fluctuating in the line voltage makes it inadvisable to leave the patient unattended; and third, the use of any short wave apparatus except the one employing electromagnetic induction does not approach the efficiency of the conventional apparatus for heating the deeper tissues.

THE ELECTRIC BLANKET

Electric blankets of the past were of such construction that dangers were imminent. Their chief disadvantages were the danger of fire and shock to the patient, a short circuit being easily formed by the patient's sweating.

The blanket temperature frequently rises above 150° F. This burns out some of the resistance material which, in turn, ignites the blanket.

In the newer type of blanket these hazards have been removed. Safety from shock is assured by the use of less than five volts of electricity in the heating elements. This is slightly less voltage than required by an ordinary flash light. A blanket thermometer incorporated into the blanket registers the temperature of the heating element and eliminates the hazard of fire if the blanket temperature is not permitted to rise above 150° F.

With the use of the electric blanket a more gradual rise of temperature is apparent than with diathermy. With the former, at least five hours are necessary to reach a

temperature height of 105° F., while with the latter, the same results may be attained in from sixty to ninety minutes. Even the simple mechanism of the electric blanket necessitates constant supervision of the patient throughout its operation. Its most desirable characteristic is its limited use to conditions requiring less elevated temperatures. Its desirable aspects are its low cost and adaptability to use in the home.

PLAIN BLANKETS

Recently Epstein and Cohen[23] devised a simple method of producing hyperpyrexia by wrapping the patient carefully in blankets and rubber sheeting. There is an even and gradual rise in the oral temperature; usually a temperature of 102° F. is reached in four hours, and 104° F. in from four to five hours. The temperature may be maintained at 104 or 105° F. for the period desired. The pulse rarely exceeds 140 per minute. This method employs the principle of preventing heat radiation from the body surface.

The advantages enumerated by Epstein and Cohen are: First, "the necessity of expensive electrical equipment is eliminated; second, there is no danger from electrical burns; third, it is less exhausting to the patient than diathermy or the heat cabinets; fourth, the rise in temperature is gradual and there is little disturbance of the pulse and respiratory rates."

In considering this method of inducing therapeutic fever, it should be remembered that at high temperature the mouth temperature reading is usually inaccurate. Any judgment formed which is misleading to the technician or attending physician is extremely dangerous for the patient.

A patient constrained continuously for from twelve to fourteen hours, discomforted and discommoded by the heavy weight of many blankets has a source of annoyance many times more troublesome than the induced fever. It is a drastic procedure, unnecessary in view of the modern equipment competent of producing efficient results in a more humane way.

RADIANT HEAT CABINETS

It is considered by most physicians who have used the radiant heat cabinet that its most objectionable feature is an important one. The pulse rate of 170 to 190 attained by the use of radiant heat seems excessive when compared with the lower pulse rate of 110 to 120 resulting from the application of penetrating heat. Then too, the temperature of the cabinet must be high to maintain the patient's fever elevation. It has been proved that external heat reverses the natural temperature gradients of the body at the time of the rise in temperature. The heart rate,[2, 51] is directly dependent upon the temperature of the skin when radiant heat is employed. The capillary pulse volume is relatively increased and the amount of perspiration correspondingly decreased.

Bishop, Lehman and Warren[10] make a more favorable report. After comparing three methods of producing artificial fever, conventional diathermy, radiothermy and the radiant energy cabinet, they conclude the last more comfortable, convenient and economical to operate. They found that with the apparatus, the temperature can be elevated to the desired degree. They have elevated their patients' temperature to 103.1 and 106.7° F. for thirty-four and twenty-seven hours respectively. By means of an amplifying system consisting of a microphone and loud speaker, they are able to listen to the heart throughout treatment.

One advantage of the heat cabinet is that there is no tendency toward an increased elevation of the patient's temperature when radiation is turned off. This is in marked contrast with diathermy where a slight increase is evidenced.

My use of radiant heat cabinets was not successful. Seven patients showed evidence of circulatory collapse and heat stroke. Cessation of sweating was observed occasionally. This, in my estimation, approaches heat stroke. Patients require a great deal more attention in the radiant heat cabinet than with the inductotherm method which we employ. Four patients showed circulatory collapse when treated with the radiant heat cabinet, but later were treated by means of

the inductotherm, experiencing no ill effects. I was in communication with Dr. Stafford Warren regarding this matter. He suggested that excessive heat could have been avoided had the lamps been dimmed with a rheostat, the use of eight 60 watt lamps being more than sufficient to sustain artificial fever.

RADIANT HEAT AND HOT AIR CABINETS

Walinski[90] (1928) and Kahler and Knollmayer[34] (1929) used electric light cabinets in order to produce artificial fever. Roth, et al, many years before, used similar cabinets which induced bouts of fever. Their purpose was to increase metabolism and not to produce therapeutic fever.

At present, many cabinets employing radiant heat and hot water are on the market. Some of these machines have added atomized or water vapor to the heated air, thus varying degrees of saturation may be reached. "The nearer the point of complete saturation is approached, the less heat will be necessary to produce a fever, because complete saturation prevents any cooling whatsoever of the skin surface by the perspiration which cannot evaporate."

There is a serious element of danger in the use of hot water sprays and atomized hot water for the reaction is identical with that of the hot bath.

HUMIDIFIED HOT AIR CABINETS

This type of apparatus uses an atmosphere of hot, humidified air around the patient to raise the body temperature. There is a conduction of heat through the skin into the body, and in this supposedly lies one of its advantages. In contact with the skin, the hot air (usually about 150° F.) frequently burns the patient, and great care and experience are required to avoid serious burns. The air passes over grid type resistance units which heat it. It then passes over an electrical humidifier which adds moisture. Blowers then circulate the hot air into the chambers which hold the patient. It passes over the body of the patient and is drawn through vents or gratings back over the heaters and humidifiers. Every patient should have his feet wrapped in canton flannel boots to avoid serious burns on the skin of the toes. In markedly curved and protruding parts such as the nose, ears, fingers and toes, there is a deficient circulation accompanied by lowered skin surface temperature. In these areas burns are more easily produced. In such high temperature, the respiration rate goes to high values, and frequently definite alkalosis is produced of such severity that it is accompanied by tetany. Pulse rates go as high as 180 to 200. Various other physiologic effects are noticed; tachycardia, hyperventilation, and very low values of diastolic pressure giving rise to water-hammer pulse, capillary pulse and pistol shot signs over the femoral arteries.[81]

All of the machines in this class are fundamentally of the same mechanical construction with different controls and devices such as temperature charts and long distance thermometers. A general description will include most of these units. All of them consist of some heat-insulated cabinet in which the patient lies in the dorsal position. The patient's head is the only part that protrudes from the cabinet. All cabinets have a circulating fan that draws the air over the heater and humidifier, and into the cabinet holding the patient. The relative humidity is maintained at around 50 per cent during the treatment by means of the humidistat.

Rectal temperatures are taken at intervals with the patient in the atmosphere of hot air. It seems only natural to assume that the temperature thus obtained is higher in value than the actual body temperature due to the fact that the surrounding air is much hotter than the body of the patient. Since heat flows only from hot to cold it is natural that some of the heat in the hot air outside of the rectum gets to the bulb of the thermometer by convection and conduction.

In summation, it seems that the hot air cabinet is likely to burn the skin of the patient in areas of deficient circulation, such as scars and edematous areas. It may produce various undesirable physiologic effects due to the very high temperature of the en-

vironmental air and subject to a reasonable doubt the accurate measurement of the rectal temperature during treatment.

The criticism offered by Stecher[81] is that his patients, irrespective of the use of sedatives, became apprehensive, restless, and uncomfortable, and in many cases, a continuation of treatment depends to a considerable extent upon the ability of the nurse to entertain, distract, persuade and cajole. Slaughter and Trautman[79] seem to answer this criticism satisfactorily. They state that since the relative humidity in the cabinet has been changed from 35 to 40 per cent range (as advocated by Stecher) to a 50 to 55 per cent range, and, since the dry bulb temperature dropped from 150 to 155° F. (as advocated by Stecher) level to 140 to 145° F., there has been a marked decrease in burns and restlessness.

I personally observed some of these patients under treatment by Slaughter and Trautman and noted very little restlessness at temperatures as high as 107° F. A further criticism on this subject is answered by Simpson[78]; during a period of four years he has subjected patients to approximately 16,000 hours of sustained fever with only an occasional mild burn which occurred at the beginning of his series of treatments.

The humidification of hot air cabinets cannot alter the basic physiologic principles which affect the human system. However, time necessary for fever elevation has been so greatly decreased that a long period for systemic fever induction is no longer exhausting to the patient.

The objections to the hypertherm or humidified air-conditioned cabinets are the high environmental temperature and the low humidity which alter the physiologic temperature gradients.

Before this type of apparatus can be accepted it must make adequate provision for extremely low cabinet temperatures and relative humidity for inducing the patient's temperature, controlling and sustaining it at the required elevation. Then and only then, will the hypertherm be placed on a sound physiologic basis and its use be unequivocally recommended by physicians who realize the valuable therapeutic properties of hyperpyrexia.

ELECTROMAGNETIC FIELD (INDUCTOTHERM)

The principle of producing heat by electromagnetic induction within the patient's body by means of an alternating electromagnetic field has been effectively utilized in producing artificial fever. The patient is placed in this field and eddy currents are set up in his tissues, thus causing a gentle rise in temperature. There is no contact with electrodes, the alternating field being induced into the patient's body by means of a coil encircling the body or one of the "pancake" type which may be placed over the chest and abdomen. Higher environmental temperature has no part in producing artificial fever by this method. Eddy currents are set up chiefly in the vascular and conductive tissues by means of an alternating current of approximately twelve to fifteen million cycles per second. These, in turn, are dissipated as heat. The generation of heat produces a rise in the patient's temperature and hyperpyrexia has been induced without many of the undesirable physiologic effects which sometimes are evident. It is interesting and important to note that the induction of eddy currents in the vascular tissues is more pronounced than in the less conductive adipose tissues, simulating in so far as the location of the generation of heat is concerned the natural production of heat.

The environmental atmosphere of the patient is not excessively high, and therefore danger from burns from this source is eliminated. As the electromagnetic field is not distorted by moisture spots appearing on the patient, the danger from burns caused by concentration of heat within a small area is also non-existent. This internal or penetrative method of fever induction does not disturb the basic physiologic relationship and therefore, in my opinion, comes nearer to approaching the ideal in both comfort and safety than any other method employed.

AIR-CONDITIONED CABINETS COMBINED WITH ELECTROMAGNETIC INDUCTION

Throughout, the outward appearance of this cabinet is similar to many humidified hot air cabinets, but the principles of operation differ. The cabinet itself is not the fever producing agent. The ends of the coil are plugged into the receptacle of the inductotherm. The inductotherm is a vacuum tube oscillator generating an alternating current having a frequency of approximately 12,000,000 to 15,000,000 cycles per second. The current is conducted through this flexible heavy insulated cable which is placed over the tissues where heat is desired. Heat is inducted into the patient's body by means of this coil.

The cabinet may be said to serve as an insulating blanket, preventing heat dissipation. Free circulation of slightly heated and humidified air within the cabinet as well as its spacious construction provide for the environmental comfort and safety of the patient.

The cabinet contains two compartments. The patient's compartment is commodious enough to allow free movement. The coil is suspended above or below the patient and is hidden from view by the sponge mattress, two and a half inches thick, upon which the patient rests.

Adjoining the patient's compartment are air ducts which supply the warmed and humidified air. This conditioning takes place in what is known as the air-conditioning compartment where the required temperature, usually that of the skin or a little higher, is automatically set on the thermostat. This compartment also contains the humidifier, the heater, and the blower. The humidifier consists of a series of pans filled with water. Air forced over these picks up moisture, passes over the heating element, and finally is forced through the air ducts and into the patient's compartment above.

The blower and heater units make electrical contact through sockets on the thermostat. When the temperature in the patient's compartment rises to the desired environmental temperature, the heater unit automatically turns off, but becomes energized again should the temperature decrease. Thus a fairly constant temperature is maintained in the patient's compartment.

The humidity is maintained at about 90 per cent. This degree of humidity and the temperature of the cabinet serves efficiently to retard dissipation of heat from the patient through radiation and evaporation of perspiration. The continuous circulation of air within the cabinet prevents a layer of saturated air from accumulating about the patient. As a result some evaporation of perspiration is permitted, thus adding appreciatively to the patient's comfort.

The inductotherm method is highly advantageous for several reasons. It employs the principle of penetrative heat. No reversal of nature's physiologic law is encountered. Its maximum heating effect occurs in an electrolytic solution similar to that of physiologic salt solution. Its simplicity of principle, ease of operation and comfort to the patient makes it the most desired "high frequency" method now in use for the production of artificial fever. Its initial cost should not be considered a disadvantage when consideration is taken of the many merits of the inductotherm.

REACTIONS IN FEVER THERAPY

Several types of reactions may occur while using electrical methods to produce high sustained fever. Records of our results in approximately twelve thousand hours of sustained fever of 105° F. and above compare favorably with other methods. The following reactions were observed and recorded:

Many patients become restless around noon, but the employment of a sedative such as sodium amytal, spasmalgin or codeine soon remedied this condition.

Fever blisters occurred in two patients.

One patient complained of dimness of vision during the height of his temperature. Vomiting occasionally occurred at the beginning of treatment when there was a sudden elevation of temperature after taking breakfast or when fluids were freely forced before the desired temperature elevation was attained.

Three patients had a tachycardia, and two had an accompanying cyanosis. Both the cyanosis and tachycardia disappeared soon after removal from the fever bag. Later, treatment was resumed with no subsequent recurrence.

Three patients had superficial burns before our technic was perfected. Separating the mattress, thus making a trough for the coil, prevented its close contact with obese patients and remedied this condition. Later, in one case the "pancake" coil was placed in contact with the zipper opening of the fever bag. This metal zipper became hot from absorption of the current and burned the patient. During the past four years no burns have occurred. No burns, whatever, have occurred during the use of the cabinet.

One patient had a marked loss of weight, fifteen, seventeen, and fifteen pounds being lost after each of three treatments. Restoration to normal was retained before each successive treatment.

Jaundice of short duration was noted in one patient. This, however, did not interfere with treatments.

There was one fatality. A temperature of 105° F. was reached in ninety minutes, and current was then disconnected. Two hours later, temperature had reached 106° F., the pulse had become imperceptible and the patient became cyanotic. After the administration of adrenalin by the house physician, the temperature promptly rose to 107° F. associated with symptoms of heat stroke, and then slowly descended to 103.8° F. when the patient expired.

In the fatality, three considerations must be taken: First, is the patient a poor risk for fever therapy? Second, is the department personnel properly trained? Third, was the method of inducing fever the one most suited to the patient? The blame is not placed on the method used.

SUMMARY AND CONCLUSION

I have endeavored to make a fair evaluation of the different methods of producing hyperpyrexia and the technical procedure involved in the use of different modus operandi. It is hoped that this criticism has been constructive. I believe that the advantages of physical methods over pathologic ones are now apparent to all. I have no desire to promote any type of fever method or machine. The objective is to employ the best method which will produce an elevation of temperature, then control and maintain it in the way most desirable for the treatment of disease. With some, high sustained temperatures will be required; with others a mild degree of systemic elevation will be sufficient. It is the "controllable" element in fever production which has made the process a safe and sane one from the viewpoint of the patient and a therapeutic agency of inestimable value to his physician.

The fullest possibilities latent in hyperpyrexia have not yet been attained. No other field of physical therapy holds greater promise.

I wish to acknowledge with grateful appreciation the valuable work of Mrs. Marion Stewart and her assistant, Miss Pearl Simon. Without them, I should not have been able to demonstrate the efficiency of hyperpyrexia produced by means of electromagnetic induction. As Medical Director of the Physical Therapy Department at Charity Hospital, I conducted and supervised treatment of 129 patients with 5,200 hours of sustained fever of 105° F. The fatality and most of the unfavorable reactions occurred in the first group of patients treated. These numbered six treated with 355 hours of induced fever. The other group of 123 patients reacted more favorably. We accredit this to our development of the proper technic and the skill and watchful care given each patient by our trained personnel.

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DISCUSSION

Dr. Nathan Polmer (New Orleans): Dr. Giles has made an intensive study and given an interesting presentation of the historic development of fever therapy. Historians have traced the concept of fever therapy to the dawn of written history. The essayist has traced the therapeutic use of hot baths to the Father of Medicine. Bierman attributes the following aphorism to Hippocrates: "Give me power to produce fever and I will cure all disease." And some four hundred fifty years later, one Ruphos, of Ephesus, said "If physicians were able to produce fever, no other method of treatment would be necessary." Of course modern physicians are not quite as optimistic about the use of physical therapeutic procedures alone but employ them along with all other methods of merit.

It might even be possible to trace the use of thermotherapy even down to Adam and Eve. It happened one evening when Adam came home late from the office and found his supper cold. The poet expressed what took place in a little couplet:

"My supper is cold, he cried with vim,
And then she made it hot for him."

From such empiric beginnings, the modern application of hyperthermia required centuries of advance in our science and art. The success that followed von Jauregg's malaria inoculations in cases of paresis, opened up new avenues for research in the production of fever by physical means. That the physical methods of hyperpyrexia, in which no foreign protein or chemical sub-

stance is injected into the body, are superior to the pathologic methods, need hardly be a subject of discussion at this time.

There are a number of physical agents that can be used for fever production. In fact the storerooms and basements of many large clinics offer evidence of the changing technics in this procedure. While hot air, hot baths, hot vapors, hot blankets, hot packs, hot boxes, high frequency currents, short-wave diathermy and electromagnetic induction all are used for therapeutic purposes, this indicates that there is as yet no one best method of hyperpyrexia. Apparatus and technics to be used in the near future may prove more simple and more effective than those employed today. As electrically induced artificial fever is but ten years old, any physician whose experience in fever therapy has extended over a period of years, has contributed his bit to the development and advancement of this therapeutic aid. Therefore it may not be amiss here to mention a few of the Southern pioneers in fever therapy. At the 1929 meeting of the American Electrotherapeutic Association there was first presented an informal report on the work of Drs. J. Cash King and Edwin W. Cooke, of Bolivar, Tennessee, in treating paresis by fever induced by diathermy. In 1930 Dr. Curran Pope of Louisville reported, "A Case of Tabes Treated by Electrothermic and Other Physical Measures." Phillips, of Miami, has done pioneer clinical work in his section of the country. Here in New Orleans, Drs. Slaughter, Trautman and their associates have treated perhaps the largest series of gonorrheal arthritics in the country. Dr. Howles has studied fever therapy in Wassermann fast syphilis. Dr. Wexberg has been interested in fever therapy in neurologic conditions. Dr. Giles has called attention to the dangers of excessive external heat and has reported on "Present Status and Technic of Artificial Fever." It has been my privilege to treat and report in the literature in 1932 the first use of diathermy pyrexia in juvenile paresis.

As to the modern application of artificial fever, it will suffice here to state that during the past six years I have personally treated with physically induced hyperpyrexia the following conditions: Juvenile paresis, syphilis of the central nervous system (tabes and paresis), acute gonorrheal arthritis, subacute and chronic pelvic inflammatory disease, chronic infectious arthritis, intractable bronchial asthma, undulant fever and multiple sclerosis.

In concluding these remarks, I wish to congratulate Dr. Giles on his interesting presentation and to re-emphasize that of greater importance than the apparatus used is the skill, experience and clinical vigilance of the physician, his nurse-technician and assistants in the application of the fever treatment.

SURGERY OF AMEBIASIS

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The surgical significance of amebiasis lies in the fact that the Endameba histolytica not only produces extra-intestinal lesions which necessitate surgical intervention, but also causes manifestations of the bowel which are easily confused with conditions requiring surgical therapy. In general, this is not sufficiently realized and the reason is due probably to two fallacious impressions: (1) that amebiasis is principally a tropical or subtropical disease, and (2) that hepatic abscess, which is generally considered the only surgical complication, is of rare occurrence. The ubiquitous occurrence of amebiasis has been repeatedly demonstrated.[1, 2] Over 11 per cent of a series of 49,336 persons examined in all parts of the United States were found to be affected with Endameba histolytica according to Craig.[1] Of even greater significance is the fact that the incidence of amebiasis is apparently increasing. In a collected series of 19,882 individuals examined before 1930, the incidence of positive infection was found to be approximately 10.3 per cent. In a similarly collected group of 28,634 individuals examined since 1930, this incidence was found to be 12.8 per cent.[2] Craig[1] has estimated that between 6,000,000 and 12,000,000 people in this country are infected with this parasite. As hepatic complications occur in an incidence of approximately 4 to 5 per cent of individuals with amebic dysentery, it can be readily seen that the potential number of hepatic complications is approximately 300,000 to 600,000. Moreover, hepatic abscess represents only about half of the complications of amebiasis which are of surgical significance. Thus, it becomes obvious that even a conservative estimate of the incidence of surgical amebiasis would be from 500,000 to 1,000,000 people in this

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country. The necessity of the surgeon's serious consideration of amebiasis is apparent from these astounding figures.

CLASSIFICATION OF LESIONS

In a previous publication[3] we classified amebic lesions of surgical significance as follows:

I. Intestinal lesions:
   A. Appendicitis.
   B. Perforation with resulting peritonitis.
   C. Massive hemorrhage.
   D. "Ameboma" (amebic granuloma).
   E. Cicatricial stenoses.
   F. Pseudopolyposis.

II. Extra-intestinal lesions:
   A. Hepatic abscess.
   B. Pleuropulmonary affections.
   C. Cerebral abscess.
   D. Cutaneous ulceration and abscess.
   E. Splenic abscess.
   F. Genito-urinary affections.

INTESTINAL LESIONS

Appendicitis: The surgical significance of amebic appendicitis has been emphasized in a previous communication[4] and may be considered one of the most frequent surgical complications of amebiasis. Amebic appendicitis may occur as an acute, suppurative, or chronic inflammatory process. The incidences of suppurative appendicitis in fatal cases of amebiasis were found by Clark,[5] Strong,[6] and Craig[7] to be 7 per cent, 40 per cent, and 16 per cent, respectively. Whereas acute appendicitis occurring during the course of an amebic infection of the bowel is likely to be suspected preoperatively, subacute and chronic amebic appendicitis are likely to be overlooked unless the physician considers the possibility of their existence. Mild symptoms produced by amebic infections of the appendix are much more common than is generally realized. In fact, the authors have found this condition so frequently that in the Tulane Service, careful stool examination for Endameba histolytic is routine in all patients in whom the diagnosis of chronic appendicitis is made. In approximately 10 per cent of these cases, a positive infection is found and the institution of anti-amebic therapy is usually sufficient to relieve all clinical manifestations. Wilkinson[8] and Huard[9] have both stressed the importance of differentiating chronic amebiasis and chronic appendicitis. Unfortunately, too much emphasis has been placed upon the diagnostic significance of a history of antecedent dysentery. However, it should be thoroughly realized that dysentery is only one manifestation of amebic invasion of the bowel and one which is not infrequently absent. As regards this fact, the authors concur with Craig[1] who states, "It is most unfortunate that the term 'amebic dysentery' should have become in the minds of most medical men as a synonym of amebiasis or amebic infection, for while dysenteric manifestations are quite characteristic of the serious infection of E. histolytica, the vast majority of such infections are not accompanied by dysenteric symptoms, but some other factor and not recognized as a result of infection by the parasite."

Because in acute appendicitis the infection is seldom if ever limited to the appendix but also involves the cecum, surgical intervention is considered undesirable and even dangerous. The prohibitive mortality rate following appendectomy during the recent Chicago epidemic demonstrates this fact with striking clarity. Absolute conservatism as employed and previously described [10, 11] in the conservative treatment of pyogenic appendiceal peritonitis is considered essential in these cases. However, appendectomy is occasionally necessary.

Perforation of Bowel: This is one of the most serious complications of intestinal amebiasis. This occurred in 19 per cent of the fatal cases and 1.5 per cent of the clinical cases analyzed by Strong[12]. Peritonitis almost invariably follows, and the prognosis is obviously grave. However, the localization of such peritoneal infections fortunately occurs more frequently, particularly in the regions of the cecum and sigmoid. The treatment consists of preoperative administration of amebacide and of incision and drainage of the abscess.

Fortunately, *massive intestinal hemorrhage* is one of the rare complications of amebiasis. Strong[13] and Craig[1] each reported two cases which ended fatally. The condition usually occurs in the very rapidly progressing type of infection, and the prognosis is extremely grave. The treatment consists of massive and repeated transfusions to replace the blood loss and to increase the coagulability, the use of amebacides, and ultraconservatism.

Amebic granuloma or *"ameboma,"* which in our opinion is a more descriptive and expedient term, consists of a tumefaction of the bowel wall as the result of repeated invasion by the amebae causing progressive destruction with replacement by fibrous tissue. A number of these cases have been reported.[14,21] The lesion consists of a firm nodular inflammatory mass with small abscesses in the more central areas. The mucous membrane is usually destroyed and the resulting ulcer is covered with dirty grayish slough. In the necrotic tissue at the base of the ulcer amebae can frequently be demonstrated. Round-cell infiltration with lymphoid hyperplasia and large numbers of eosinophiles may be observed microscopically. Fibroblastic proliferation usually occurs in the peripheral portions of the mass. These tumors are usually observed in the cecum or sigmoid and may be confused with tuberculoma, actinomycotic and malignant lesions. "Ameboma" should be considered and careful stool and serologic examinations made in all chronic inflammatory lesions involving the colon and the cecum particularly. Amebacides should be employed in all cases in which amebae are found because operative intervention may be unnecessary in these cases. However, in those cases in which extensive cicatricial stenosis has occurred, resections or short-circuiting procedures may be necessary. Even in these cases, the preoperative administration of amebacides should be done because of the possible postoperative extension of the amebic infection.

Occasionally, a localized or generalized narrowing of the colon may occur and has been observed by Craig[1] and others[21,24]. The complication is usually found in patients who have had recurrent infections over long periods of time resulting in destruction of the bowel and consequent replacement by fibrous tissue. Although they are more commonly limited to the cecum and sigmoid, rarely they may be found in the rectum. The treatment consists of preoperative administration of amebacides followed by excision or short-circuiting procedures.

Pseudopolyposis of the bowel is one of the rare complications of amebiasis and is the result of prolonged infection with consequent hypertrophy of the colonic mucosa. Cases of this nature have been observed by Hines[25] and Anderson et al[26]. The diagnosis is difficult to establish and depends upon the finding of amebae in the stool or in sections of tissue removed and upon a positive serologic examination. The treatment consists of preoperative administration of amebacides and excision.

EXTRA-INTESTINAL AMEBIC LESIONS

Hepatic abscess is undoubtedly the most common and the most important extra-intestinal amebic lesion. The incidence varies considerably depending upon whether the analyses have been made upon fatal cases of amebiasis or upon clinical cases. In a previous communication we[2] found that of 4,994 fatal cases of amebiasis collected from the literature, 1,818 had hepatic abscess, an incidence of 36.4 per cent. However, in a group of 9,039 clinical cases of amebiasis including ours there were 430 cases of amebic abscess of the liver, an incidence of 4.7 per cent. Of even greater significance is the fact that the incidence is apparently increasing rather than diminishing. In an analysis of the cases admitted to the Charity Hospital during the six-year period 1928-1933, inclusive, the incidence of amebic abscess in amebic dysentery was 15.2 per cent[27]. We made a similar analysis during the period 1934-1937, inclusive, and this incidence was found to be 20.4 per cent[2]. The reason for this recent increase in incidence is that either more cases are being diagnosed or there is an actual increase in amebiasis and liver complications.

Amebic abscess of the liver occurs predominantly in the male sex. In our series of 139 cases, we found that 119 (85.4 per cent) occurred in the male. This is undoubtedly due to the fact that amebic infection of the bowel occurs more frequently in this sex. Other factors which have been suggested as explanations for the greater incidence in the male are that alcoholism, which predisposes to hepatitis, is more characteristic of the male sex, and that trauma is more likely to occur in the male sex. The condition occurs most frequently between the ages of twenty and fifty years. In our series of 139 cases, 17.9 per cent occurred in the third decade, 29.4 per cent in the fourth, and 25.8 per cent in the fifth. The racial factor does not appear to be significant, as in the 118 cases admitted to the Charity Hospital, 20.8 per cent were white and 49.1 per cent were colored.

Amebic hepatic abscess is due to the invasion of the liver parenchyma by amebae which are transported from the colon through the portal system. The two factors important in the development of amebic hepatic abscesses are: (1) intrahepatic portal thrombosis and infarction caused by the amebae, and (2) the cytolytic activity of the amebae. Thus, in the early stages an amebic hepatitis usually occurs with a characteristic liquefaction necrosis of the parenchyma. If the condition progresses, a true abscess results. On the other hand, if prompt therapy is instituted during this stage, true abscess formation will not occur and complete restitution will be obtained.

Whereas single abscesses are characteristically present in the clinical cases, multiple abscesses are frequently found in the fatal cases of amebiasis. This is obviously due to the fact that multiple abscesses are more likely to occur in the severe cases which may terminate fatally and to the fact that postmortem examination permits more thorough studies of the liver. In 1,403 collected cases analyzed by us[2], 68.6 per cent were single and 31.3 per cent were multiple. In our series of 99 cases, 87.8 per cent were single and 12.1 per cent were multiple. The right lobe was involved in 83.8 per cent, the left lobe was involved in only 16.1 per cent. In our series these percentages were 95.9 per cent and 4 per cent, respectively. The characteristic chocolate-sauce material which is pathognomonic of an amebic abscess is due to the presence of necrotic liver tissue. The amebae are seldom found in the "pus" as is demonstrated by the fact that in 289 collected cases the amebae were found in only 16.9 per cent. Moreover, bacteriologic examination of this material usually reveals that it is sterile. In an analysis of 448 collected cases and 77 personal cases, the abscesses were found to be sterile in 86.3 per cent and 84.5 per cent, respectively. However, following open drainage the abscess rapidly becomes infected, a fact which is extremely significant and which will be discussed under therapy.

SIGNS OF AMEBIC ABSCESS

Amebic hepatic abscess produces systemic and local clinical manifestations. In our series of cases, the most frequent symptoms and signs were pain in the right upper quadrant, tenderness over the liver, fever, enlargement of the liver, and weakness and loss of weight. Fever is characteristically not marked, usually ranging between 99° and 101° F. However, in most cases in which secondary infection has occurred, the temperature is much higher. It is important to realize that in uncomplicated amebic hepatic abscess the clinical manifestations are usually not marked and the patient does not appear to be acutely ill, which is in direct contrast to the clinical appearance of a patient with pyogenic hepatic abscess[28]. Too much importance should not be placed on dysentery as a symptom in amebic hepatic abscess as is demonstrated by the fact that in our series of cases only 21.5 per cent had this manifestation at the time of admission to the hospital.

LABORATORY STUDIES IN AMEBIC ABSCESS

The laboratory studies in amebic hepatic abscess are significant. In amebic hepatic abscess in contrast to pyogenic hepatic abscess, there is a moderate leukocytosis without a disproportionate increase in the polymorphonuclear leukocyte count[28,30]. In our series, the average leukocyte count was

found to be 14,000 and the average neutrophilic count was found to be 78 per cent. A marked elevation of the total leukocyte count with a proportionate increase in the polymorphonuclear percentage almost invariably indicates secondary infection of the abscess. A slight secondary anemia is usually found as is demonstrated in our series in which the average erythrocytic count was 3,700,000 and the average hemoglobin was 65 per cent. The presence of *E. histolytica* in the stool is of diagnostic significance, although its absence does not exclude the diagnosis of amebic hepatic abscess. This is clearly demonstrated by the fact that in the collected series of 209 cases of amebic hepatic absecess, the stools were found to be positive in only 18.1 per cent. In our series, positive infection was found in 30.5 per cent. The complement fixation test of Craig[31,32] is also of diagnostic value.

X-RAY IN AMEBIC ABSCESS

Roentgenography is one of the most valuable diagnostic procedures in liver abscess as is clearly demonstrated by the fact that the roentgenographic findings were positive in 83.3 per cent of the collected series and in 88.5 per cent of our series. The characteristic roentgenographic findings have been previously described by Granger[33] and the authors[34]. In uncomplicated hepatic abscess, there is characteristic localized bulging of the right leaf of the diaphragm into the lower lung field. However, in those cases in which amebic hepatic abscess has ruptured into the subphrenic space there is characteristically an obliteration of the cardiophrenic angle in the anterior-posterior roentgenogram and of the anterior costophrenic angle in the lateral roentgenogram. In contrast to this, roentgenograms in pyogenic subphrenic infections show elevation in the lateral portion of the diaphragm and obliteration of the costophrenic angle in the anterior-posterior roentgenograms and obliteration of the posterior costophrenic angle in lateral roentgenograms.

PROGNOSIS OF AMEBIC ABSCESS

The prognosis in amebic abscess of the liver depends upon: (1) multiplicity of the lesions in the liver which in turn are dependent upon the severity of the amebic infection; (2) general resistance of the patient; (3) secondary infection of the abscess cavity; and (4) the type of treatment employed. Whereas in 87 cases analyzed by us in which the abscess was single, the mortality rate was 11.4 per cent, in 12 cases in which the abscesses were multiple, the mortality rate was 100 per cent. The presence of secondary infection in an amebic hepatic abscess is a serious complication. Secondary infection almost invariably follows open drainage, and its gravity is clearly demonstrated by the fact that of 4,760 collected cases in which open operation was done, the mortality rate was 44.2 per cent; in 457 similar cases in which aspiration and amebacides were used the mortality rate was only 6.7 per cent[2]. In our series, these respective figures were 21.6 per cent and 3.6 per cent. The presence of complications in amebic hepatic abscess also increases the gravity of the condition. In our series, there were 33 cases with complications with a mortality rate of 39.4 per cent and 106 cases with no complications with a mortality rate of 8.4 per cent. In those cases in which secondary infection has occurred open drainage of the abscess is necessary and the prognosis is influenced considerably by the type of drainage instituted. This is clearly demonstrated by the results obtained in our cases[2]. In 23 cases in which transpleural drainage was used, the mortality was 70.4 per cent; in 23 cases in which incision and drainage directly over the abscess was done, the mortality was 17.6 per cent; and in 11 cases in which an extraserous drainage was done without contamination of an uninvolved serous cavity, the mortality rate was only 9 per cent.

TREATMENT OF AMEBIC ABSCESS

The treatment of amebic hepatic abscess consists of: (1) the administration of emetine preoperatively and postoperatively, and (2) aspiration of the abscess content. The importance of the administration of emetine both before and after drainage of the abscess has been repeatedly emphasized[2,27,29,30,34,36]. In the Tulane Surgical

Service, emetine is routinely administered hypodermically in one grain doses daily for four days before aspiration except in those cases in which there is apparent danger of rupture of the abscess. In many cases of amebic hepatitis or in cases in which small abscesses are present, no further therapy will be necessary. After aspiration, the emetine administration should be continued until a total of 6 to 10 grains has been given. Leake[37] states that the amount of emetine administered over any given period of time should not exceed 10 mg. per kilogram of body weight and in the average adult weighing 150 pounds this would be approximately 10 grains. In uncomplicated amebic hepatic abscess, closed drainage or aspiration of the abscess should be employed. Open drainage should never be used except in those cases in which secondary infection is already present. The significance of this fact has been previously mentioned and is further demonstrated by the results obtained in the Charity Hospital and Touro Infirmary cases. Whereas the mortality rate in those cases treated by open operation was 21.6 per cent, in the cases treated by aspiration and emetine the mortality rate was only 3.6 per cent. The technic of aspiration is relatively simple. In the cases in which localization and bulging of the abscess are present, the aspirating needles should be introduced directly over the mass. It is preferable to perform this procedure in the operating room as strict asepsis is essential and immediate open drainage may be necessary in the cases in which secondary infection is found. In those cases in which no localizing signs are present it is important to introduce the needle in such a way that the pleural and peritoneal cavities are not traversed, and this is best accomplished by inserting the needle through the tenth intercostal space in the anterior axillary line and directing it upward, medially, and backward. In the posteriorly located abscesses, the needle may be introduced just below the twelfth rib and directed upward and anteriorly. If it becomes necessary to change the direction of the needle, it is important to remove it entirely before reintroducing it as extensive injury to the liver can thus be avoided. It is preferable to use local analgesia and a 14-gauge needle, although a larger caliber needle may be necessary if the abscess contents are extremely viscid. Immediate smear and culture of the material should always be done and, if a large number of pyogenic organisms are found in the smear, open drainage is usually necessary because in such cases the secondary infection is more important than the original sterile amebic abscess. Under such circumstances, open drainage should always be done in such a way that an uninvolved serous cavity does not become contaminated. The technic of extraserous drainage of such an abscess has been previously described by us.[38, 39]

OTHER EXTRA-INTESTINAL LESIONS

Pleuropulmonary amebiasis is the next most frequent and most important extra-intestinal amebic lesion. In a previous communication, we[40] analyzed 153 collected case and 15 cases of this type of amebiasis admitted to the Charity Hospital. With few exceptions, this condition is due to an extension of an amebic process from the liver into the thorax. In an analysis of 2,490 collected cases of amebic hepatic abscesses pleural complications occurred in 198 (7.9 per cent) and pulmonary complications in 209 (8.4 per cent), a combined incidence of 16.3 per cent. In our series, this incidence was 15.7 per cent. Because amebic hepatic abscess occurs more frequently in the male, pleuropulmonary amebiasis also occurs predominantly in this sex. Similarly, these complications are most likely to occur in the third and fourth decades of life. Whereas pleuropulmonary amebiasis is usually the result of extension from amebic hepatic abscesses, rarely amebic lesions occur in the lung due to the invasion of the systemic circulation.

We have divided pleuropulmonary amebic infection into five groups depending upon the type of involvement: (1) hematogenous pulmonary abscess without liver involvement; (2) hematogenous pulmonary abscess and independent liver involvement;

(3) pulmonary abscess extending from a liver abscess; (4) bronchohepatic fistula with little pulmonary involvement; and (5) empyema extending from a liver abscess. The respective incidences of these types of involvement in the collected series were 14.3 per cent, 10.4 per cent, 37.2 per cent, 19.6 per cent, and 17.6 per cent.

The clinical manifestations of pleuropulmonary amebiasis depend upon the extent and the mode of infection. In those cases in which a liver abscess has ruptured into the base of the right lung, the patient usually complains of rather severe pain in the lower portion of the right chest and a persistent, unproductive cough. However, if the bronchohepatic fistula develops, the patient expectorates large quantities of "chocolate-sauce pus." Dyspnea may be a common manifestation and occasionally there is pain extending to the right shoulder. The temperature ranges between 100° and 101° F. On physical examination, the liver is usually enlarged and dulness and rales are generally found at the base of the right chest. The leukocyte count commonly shows a slightly greater increase than is found in hepatic involvement. In those cases in which a bronchohepatic fistula has recently occurred, amebae can usually be demonstrated in the sputum.

The roentgenographic findings in these cases are quite characteristic. Before perforation of the liver abscess has occurred, localized bulging of the right leaf of the diaphragm may be seen. However, following the perforation there may be visualized a triangular shadow with the base towards the liver and its apex extending towards the hilum of the lung. This is present in both the lateral and the anterior-posterior roentgenograms.

The diagnosis should not be difficult if the condition is kept in mind. The characteristic clinical manifestations and the roentgenographic findings should indicate the correct diagnosis. A history of expectoration of chocolate-sauce pus is almost pathognomonic. The finding of amebae in the sputum establishes the diagnosis.

The prognosis in pleuropulmonary amebiasis depends upon the type of involvement and upon the type of therapy. The prognosis is best in those cases in which a bronchohepatic fistula is present and gravest in those cases in which the liver abscess ruptures into the pleural cavity. Whereas in the former type of involvement the mortality rate was 10 per cent in the collected cases, in the latter the mortality rate was 77.7 per cent. In a recent analysis[41] of 21 cases admitted to the Charity Hospital and to the Touro Infirmary, these respective figures were 0 per cent and 57.1 per cent. The significance of the type of therapy is demonstrated by the fact that in the collected series the incidence of recoveries without emetine was 43.9 per cent, whereas the incidence of recoveries with emetine was 91.8 per cent. In our series, these respective figures were 40 per cent and 100 per cent.

The treatment of pleuropulmonary amebiasis consists primarily of the systemic treatment of amebiasis, i. e., the administration of emetine. In those cases in which the amebic hepatic abscess has ruptured into the pleura producing an empyema, aspiration is indicated. However, in those cases in which a bronchohepatic fistula is present, conservatism is preferable.

Amebic abscess of the brain occurs very rarely. It is usually observed in patients who develop rather severe and progressive amebic infections. The incidence of this type of amebiasis apparently depends to a great extent upon geographic locations. Kartulis[42] reported the presence of brain abscess in 3 per cent of the cases of amebic dysentery observed in Egypt, and Izar[42] collected 56 cases of amebic abscess of the brain, 29 of which occurred in Egyptians. The condition is undoubtedly due to a blood-borne infection and not infrequently associated with some pulmonary involvement. The clinical manifestations are similar to other forms of cerebral abscess except that they progress much more rapidly and invariably end fatally. There are no reported recoveries in spite of the various methods of therapy employed.

Cutaneous amebiasis occurs relatively rarely and usually results from drainage of an amebic abscess. Occasionally it is due to a perianal extension of an amebic infection in the distal portion of the rectum. We[8] have collected 28 cases from the literature. A few cases have been reported in which the cutaneous involvement was primary. The clinical manifestations consist of progressive extension around the site of drainage, elevation and induration of the skin with peripheral pigmentation, necrosis, and undermining. From the progressive cutaneous ulceration there is usually a blood-tinged fetid discharge. The treatment consists of the administration of emetine and radical excision in those cases in which anti-amebic therapy alone does not suffice.

Splenic amebiasis occurs extremely rarely and is due to metastasis from the intestines or to direct extension from an abscess of the left lobe of the liver. Huard[9] states that only six cases have been reported. The lesion occurs so rarely that it is of little clinical significance. The diagnosis is usually made after death.

Genito-urinary amebiasis is also an extremely rare occurrence and is usually due to direct invasion of the kidneys from an amebic process of the liver. A few cases have been reported in which the lesion was apparently metastatic from the bowel such as extension from the colon to the bladder. Cases have been reported in which extension has occurred to the epididymis, testicle, fallopian tube, prostate, ovaries, vagina, cervix, and penis.

SUMMARY

1. Amebic lesions of surgical significance may be classified as: (1) intestinal, and (2) extra-intestinal.

2. Of the intestinal lesions, amebic appendicitis is the most important. Careful stool examination for *Endameba histolytica* should be made in all cases diagnosed as chronic appendicitis. The significance of this is clearly shown by the fact that approximately 10 per cent of these cases have been found to have positive infections, and the institution of anti-amebic therapy relieved the clinical manifestations.

3. Perforation with resulting peritonitis is one of the most serious complications of intestinal amebiasis.

4. Massive intestinal hemorrhage is one of the rare complications of amebiasis and usually occurs in the very rapidly progressing type of infection.

5. Amebic granuloma or "ameboma" is occasionally observed in intestinal amebiasis and develops as a result of repeated invasion by the parasite causing progressive destruction with replacement by fibrous tissue. Occurring usually in the cecum or sigmoid, they may be confused with tuberculoma, actinomycotic and malignant lesions.

6. Cicatricial stenoses and pseudopolyposis are rare complications of amebiasis.

7. Hepatic abscess is undoubtedly the most common and the most important extra-intestinal amebic lesion. A brief analysis of 139 cases is presented.

8. Pleuropulmonary amebiasis is the next most frequent and most important extra-intestinal amebic lesion. The incidence of pleuropulmonary amebiasis in amebic hepatic abscess is 15.8 per cent.

9. Amebic abscess of the brain occurs rarely and is usually observed in patients who develop rather severe and progressive amebic infections.

10. Cutaneous amebiasis usually results from drainage of an amebic abscess. The lesions are characterized by progressive ulceration associated with a blood-tinged fetid discharge.

11. Amebic infections of the spleen and genito-urinary system occur relatively rarely.

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DISSECTING ANEURYSMS*

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A dissecting aneurysm is the lesion produced by penetration of the circulating blood into the substance of the wall of a vessel with subsequent extension of the effused blood for a varying distance between its layers. Generally the aorta is the vessel involved, though dissecting aneurysms may form in any vessel. According to Shennan,[1] Manunoir (1802) clearly recognized the condition; Peacock, in 1843, established it on a firm foundation as a pathologic entity, and Swaine (1855-6) diagnosed the first case prior to death.

Having encountered a dissecting aneurysm on several occasions in the past few years, my interest was aroused and I am reporting a group of six cases occurring in the Shreveport Charity Hospital, from 1929 to 1939, and confirmed by autopsy performed by Dr. W. R. Mathews.

CASE REPORT No. 1

C. C., a white male, 66 years of age, was admitted to the Shreveport Charity Hospital, August 9, 1934, with a strangulated right inguinal hernia which developed the previous day. He was an obese white male 66 years of age. His heart was enlarged downward and to the left. There were no murmurs and the blood pressure was 182/98. The abdomen was protuberant, with a mass in the

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right inguinal region, interpreted as a strangulated inguinal hernia. There was slight pitting edema of the ankles.

Hernioplasty was performed under spinal anesthesia as an emergency procedure. His postoperative condition was fair, but he expired at midnight on August 10.

Autopsy showed diffuse congestion of both lungs with diffuse pulmonary edema, and bronchopneumonia. The heart weighed 600 grams, with calcification at the base of the aortic valve and bluish plaques involving the commissures. The aorta showed numerous irregularities of the intima due to depressions and raised bluish plaques and large soft raised corrugated plaques containing soft greasy material interpreted as atheromatous abscesses. There was a beginning dissecting aneurysm 5 cm. above the aortic ring on the uppermost part of the aorta. The arch of the aorta was considerably dilated. The capsules of the kidneys stripped with difficulty, exposing very marked granular surfaces. The liver weighed 2100 grams. Death was attributed to terminal hypostatic pneumonia and congestive failure.

DISCUSSION

The hypostatic pneumonia and the failure must be classified as incidental findings. It apparently had no bearing upon the final outcome and we do not know when it occurred. Syphilis and arteriosclerosis were both present in the aorta.

CASE REPORT No. 2

P. T., a white male, 39 years of age, was admitted to the Shreveport Charity Hospital, January 7, 1932, complaining of pain in the abdomen. He stated that on January 6, 1932, while walking down the street he experienced a sudden sharp pain in the abdomen. His left leg gave way, he fell and has not been able to walk since. The pain in his abdomen has continued and he now has some pain in his left foot.

He was a well developed, and well nourished white male, acutely ill and suffering some pain. He was slightly cyanotic and his pulse was very weak. The lungs were apparently normal. The heart sounds were very faint and no murmurs were heard. The blood pressure could not be determined. He was unable to move the left leg, which was cold and clammy.

He was admitted at 11:00 p. m. on January 7, and expired at 9:00 p. m. January 8. He apparently rallied some during the morning, but was quite uncomfortable.

Autopsy revealed cardiac tamponade due to hemorrhage into the pericardium from a ruptured dissecting aneurysm. The heart weighed 380 grams and the left ventricular wall measured 2.8 cm. Two inches above the aortic ring there was a circular rupture of the intima and media, involving the entire circumference, except about 1½ cm. anteriorly. Dissection extended proximally and distally, with rupture into the pericardial sac and into the mediastinal tissue about the aorta. Pearly white translucent plaques of various sizes were seen in the lining of the aorta.

CASE REPORT No. 3

M. B., a colored female, 55 years of age, was admitted to the Shreveport Charity Hospital, December 28, 1930, complaining of dyspnea, and pain in the lower abdomen. Cardiac symptoms had existed for about one year and in July 1930, she was treated here for epistaxis. Present illness began one week ago, with pain in the lower abdomen, above pubes and to the right. The pain was described as if something was "pulling in her." The past history was irrelevant.

The patient weighed about 200 pounds and apparently was not in acute pain. The sclera was of a slight icteroid tint. The heart was enlarged downward and to the left with a systolic murmur at the apex and base. The rhythm was irregular, apparently due to premature beats and the blood pressure was 210/160. There were no abdominal masses or areas of tenderness. The urine showed a trace of albumin and the blood Wassermann was negative.

She was admitted about midnight on December 28, and rested fairly comfortably until about 3:00 a. m. on January 1, when she complained of epigastric pain and dizziness. At this time, her pulse was weak and irregular, the blood pressure was recorded as 120/90 and she was bathed in cold perspiration. Her condition improved and was fairly satisfactory, but she expired suddenly on January 5, about 6:00 p. m.

Autopsy revealed cardiac tamponade from hemorrhage into the pericardium. The pericardium contained 250 c.c. of blood-tinged fluid and a blood clot, measuring in its maximum thickness, 4 cm., was found tightly hugging the heart. The heart weighed 550 grams and the maximum thickness of the left ventricular wall at its base was 28 mm., there was marked dilatation of the ascending portion of the arch of the aorta with dissecting of the intima and part of the media from a point about 2 cm. above the aortic valve for three inches. This completely surrounded the organ in some places and contained considerable clotted blood. About 3 cm. above the aortic orifice, there was an external rupture measuring 1 cm. into the pericardial sac. There was undue adhesion of the aorta to adjacent structures. Elsewhere the lining of the aorta was extremely irregular on account of bluish translucent plaques, stellate and linear depressions. The coronary arteries presented rather marked arteriosclerotic changes. The capsules of the kidneys stripped with great difficulty, exposing coarse and finely granular surfaces.

DISCUSSION

In both of these cases there was the initial complaint of abdominal pain, but from the autopsy the dissecting aneurysm was confined largely to the ascending aorta. The abdominal pain was therefore entirely a referred pain. Autopsy revealed no explanation for the pain and loss of function in the left leg in Case 2, but the vessels of the leg were not explored. In both cases rupture was into the pericardium. Syphilis was present in the first case and syphilis and arteriosclerosis in Case 3.

CASE REPORT No. 4

C. W., a 56 year old colored male, farmer, was admitted to the Shreveport Charity Hospital, April 30, 1935, complaining of generalized abdominal pain. He had not been seriously ill until about 2:00 p. m., April 29, 1935, when he was suddenly seized with substernal pain which radiated to the back between the shoulder blades, the abdomen and thighs. He immediately felt weak, became dyspneic and had cold perspiration. On account of the weakness and agonizing pain, he went to bed and vomited shortly afterwards. He suffered intense, continuous pain throughout the night and came to the hospital the following morning. At this time a generalized, agonizing abdominal pain with radiation to the thighs seemed to trouble him most. There was never any localization of the abdominal pain. He was given a half grain of morphine and sent to the ward.

Physical examination revealed a well nourished but not obese patient in great pain and very dyspneic. He was more comfortable in the sitting posture. The pulse rate was recorded as 58, the blood pressure 220/120, respiration 32, and the temperature 98.6°. Respiration was described as labored and restrained. There were no rales. The heart was enlarged to the left and there was a systolic aortic murmur. The liver and spleen were not palpable. A reducible umbilical hernia was extremely tender along the upper right margin of its opening through the abdominal wall. There was no abdominal distention or rigidity.

An x-ray was interpreted as negative for perforation of the gastrointestinal tract and intestinal obstruction.

There were 8,800 leukocytes, 73 per cent neutrophils, and the blood smear was negative for malaria. The Kahn (blood) was negative.

A provisional diagnosis of acute abdomen, ruptured appendix, or ruptured peptic ulcer, was made and under spinal anesthesia an appendectomy through a right para-median incision was done at 4:00 p. m., on the day of admission.

The patient's postoperative reaction was good. On the first, second, and third, postoperative days the temperature ranged between 101 F. to 103 F. On the fourth postoperative day the temperature became normal and for the remainder of his course ranged between 98.6 to 100.4 F. On the seventh postoperative day, the patient complained of precordial pain which the intern thought was an anginal attack.

The nurses' record showed only three doses of morphine postoperatively and usually recorded a fair day or a fair night. Only one reference was made to a specific complaint and that was abdominal pain on the second postoperative day. At 6:00 p. m., patient was described as quiet, and at 6:40 p. m., he died suddenly, on the tenth day of his illness.

Autopsy showed the left pleural cavity filled with fluid and clotted blood, measuring 2500 c.c. The fat tissue in the anterior mediastinum was markedly thickened, due to hemorrhage. The pericardial sac contained about two ounces of clear fluid. In the arch of the aorta, at the level of origin of the left subclavian and common carotid arteries, was a dissecting aneurysm which extended downward in the anterior lateral aspect of the aorta, throughout the length of the aorta and the left common iliac. There was a long, slightly irregular, longitudinal slit in the intima extending into the media, commencing at the origin of the left subclavian artery and extending downward for 5 cm. There was a transverse extension from this for a distance of 1½ cm. The dissection occurred in the plane of the media, creating a false passage that admitted easily two fingers. There was a rupture of the aneurysm at its beginning into the left pleural cavity, the opening measuring 1½ cm. There were atheromatous plaques scattered throughout the aorta. The heart weighed 600 grams and the left ventricular wall measured 3.5 cm. at the base. The lining of the coronary arteries was smooth and pale and there were no valvular lesions.

DISCUSSION

The symptoms in this case were predominantly abdominal to the extent that laparotomy was performed. The abdominal pain was due to the dissection extending down the abdominal aorta and left common iliac. Arteriosclerosis and hypertension were both present.

CASE REPORT No. 5

A. G., a colored female, 60 years of age, was admitted to the Shreveport Charity Hospital in a comatose condition. From her husband was obtained the history that she had been sick for a week. Illness began suddenly with fever which had continued and she had had several chills. During this time she had pain in the right shoul-

der, nausea, vomited once, and for several days a diarrhea, six to eight stools a day, but no blood. The past history as obtained contributed nothing of importance.

She was fairly well nourished, in partial coma with rapid, shallow respiration. Oral hygiene was poor with some teeth missing and some carious. There were fine moist rales at the left base posteriorly. The heart was not enlarged, there were no murmurs, the sounds were distant, rhythm regular, pulse 140 and the blood pressure was 148/66. The entire abdomen was apparently tender to deep and superficial palpation. The right shoulder was tender and motion was limited and painful.

The total white count was 33,050, with 71 per cent neutrophils. The urine showed a heavy trace of albumin and the sputum was negative for tubercle bacilli. An x-ray of the chest showed widening of both hila zones with congestion at the bases.

She was in the hospital from September 15, to September 27. During this time she was acutely ill, her temperature ranging from 98.6 to 104 F., pulse 110 to 140, and respiration 30 to 40. At no time was she entirely rational and she expired on September 27, about 11:00 a. m.

Autopsy revealed several superficial bedsores in the sacrococcygeal region, a large oval ulceration on the medial aspect of the left thigh and several superficial ulcers on the left leg. There was some yellowish purulent material in the left pleural cavity, the lower left lobe was largely atelectatic and the pleura covered with flakes of fibrin. The heart weighed 200 grams and the myocardium was of a chestnut brown color. There was arteriosclerosis of the coronary arteries and the aorta. At the mid-portion of the thoracic aorta, there was a circular dissecting aneurysm measuring 4 cm. in length. There was a rupture of the intima 1½ cm. in length on the posterior wall. The aneurysmal space was filled with thick bloody material that resembled puriform material, smears from which showed streptococci. Smears from the pleural exudates showed no organisms.

DISCUSSION

The very unusual finding of an infected dissecting aneurysm was present in this case. I have not seen the report of a similar case. How long the aneurysm had existed we do not know, nor do we know the source of the streptococcal infection. It is of course possible that the primary infection was in the left pleura with extension to the aneurysm. Again arteriosclerosis was present, without cardiac enlargement or hypertension.

CASE REPORT No. 6

J. W., a colored male laborer, 28 years of age, entered the Shreveport Charity Hospital complaining of pain in the upper chest. On July 4, 1938, without previous symptoms, he suddenly developed a severe pain in the upper mediastinum which radiated up the neck to the mastoid regions, to the left shoulder, and downward to the kidney region. Large drops of perspiration appeared on the skin and within a few minutes he fainted. He regained consciousness shortly, but was quite uncomfortable because of the chest pain. After an hour or so, he was somewhat relieved but was never completely comfortable.

Palpitation of the heart had been present from time to time for several years but he had never experienced dyspnea or noticed edema. He had pneumonia in 1926 and 1930, and in 1937 contracted gonorrhea and syphilis.

On examination, he was described as well nourished, mentally clear and in no apparent acute distress. The systolic blood pressure was 140 and the diastolic was 100 (left) and 105 (right). Temperature was 99.4 F., pulse 100 and respiration 20. The right side of the neck was slightly tender but there were no masses or visible pulsations. The lungs were clear and resonant. The PMI was in the fifth interspace inside the midclavicular line and a to-and-fro murmur was heard in the aortic area. By percussion the mediastinum was 9 cm. in width at the second and third interspace. The liver was palpable at the costal margin. A small scar was present on the anterior aspect of the glans penis.

Examination of the blood showed 18,600 white cells with 65 neutrophils, 33 lymphocytes and 2 large mononuclears. On the following day the count was down to 11,600 with 70 neutrophils. The Kahn was four plus. The urine showed a specific gravity of 1.031, faint trace of albumin, 30 pus cells per high powered field and an occasional red cell. An electrocardiogram showed sinus rhythm with a rate of 70. The conduction was normal and the electrical axis normal. The T waves in Leads I and II, were upright and isoelectric in lead III.

The x-ray of the chest showed marked enlargement of the mediastinal zone, reaching well above the sterno-clavicular joint.

During his eight day stay in the hospital the temperature was usually normal but reached 100 F., on the third and fifth days. The pulse ranged from 70 to 100 and was charted as slow as 60 on one occasion. The respiratory rate was normal. On the day of admission the nurse noted that he complained of pain in the chest. Again on the night of the fourth day he complained of pain in the left shoulder and inability to make himself comfortable. He was permitted to go home on the eighth day with instructions to remain in bed.

During the evening visiting hour of the following day he visited patients in the hospital. During the same night his wife was awakened by his gasping for breath. She was unsuccessful in her attempt to arouse him and brought him to the hospital. He entered the hospital at 1:30 a. m., in profound shock. The skin was cold and clammy, he was unconscious and the blood pressure could not be obtained. The heart sounds were inaudible. Heat was applied to the body and he was given infusions, digalen and adrenalin but never rallied. He expired at 12:30 p. m.

The autopsy revealed a pericardial tamponade due to hemorrhage, 1000 c.c. of blood, from perforation of a recent dissecting aneurysm of the ascending aorta. The heart weighed 300 grams and showed simple sclerosis of the mitral leaflet. About 5 cm. above the aortic cusps the lining of the aorta showed a circular rupture which almost encircled the organ. This extended through both the intima and media and also involved the adventitia. There was some dissection both proximally and distally, about 9 cm. in entire length.

There were atrophic longitudinal and angular white scars in the vicinity of the rupture described above. Quite definite arteriosclerosis was present in the lining of the aorta and in the large vessels arising therefrom, including particularly the left coronary which showed considerable involvement. The spleen weighed 90 grams and the liver 2300 grams. The right suprarenal was almost completely replaced by a slightly nodular, brownish-red tumor, measuring 7 cm. in diameter, which proved to be a paraganglioma.

DISCUSSION

This case was particularly interesting because of the presence of the paraganglioma and its possible relation to the dissecting aneurysm. Paragangliomas may be the cause of hypertension and it is possible that elevation of the blood pressure at intervals due to the paraganglioma was the cause of the initial rupture and the later external rupture. Frequent blood pressure readings were not made during his stay in the hospital. The to-and-fro aortic murmur present was not due to syphilitic involvement of the aortic valve, but to dilation of the aortic ring resulting from proximal dissection of the aneurysm. Again there were both arteriosclerosis and syphilis present.

FREQUENCY

Shennan,[1] in his excellent review of the subject, collected 300 cases of dissecting aneurysms of the aorta, three of the pulmonary artery and six of the peripheral arteries. Eleven of Shennan's personal cases were seen at Aberdeen from 1918 to 1932, during which time there were 1,922 autopsies, an incidence of 0.57 per cent. Perry[2] reports five cases in 2,763 autopsies, an incidence of 0.18 per cent. Glendy, Castleman and White[3] reported an incidence of one in 630 autopsies, 0.16 per cent. At the Shreveport Charity Hospital there have been six cases in 3,400 autopsies, from 1929 to 1939, an incidence of 0.18 per cent.

AGE AND SEX

The majority of dissecting aneurysms occur between the ages of 40 and 70 years, though they may occur earlier, as one of our patients was 28 years old. It has also been noted in young individuals associated with coarctation of the aorta. Males have predominated in the cases reported. Of the six cases I am presenting, four were males and two females, and their ages were 28, 39, 55, 56, 60 and 66 years.

PATHOLOGY, ETIOLOGY AND PATHOGENESIS

Dissecting aneurysms begin usually in the ascending aorta, though they may begin in the transverse or descending aorta. There is a tear of the intima, usually transverse, 1.5 to 2 cm. in length and about 1.5 cm. above the aortic ring. The tear extends through the intima and part way into the media, usually to the outer third, where the penetrating blood finds a line of cleavage and begins to dissect. The dissection is between the middle and outer third of the media, and generally extends about one-half to two-thirds way around the circumference. The dissection may extend proximally down to the aortic ring and distally varying distances, even involving the entire aorta and extending into the iliac vessels, as in Case 4.

Generally, the external sheath cannot withstand the internal pressure so that rupture occurs, usually into the pericardium, as in three of my cases, but if more distal into the pleural cavity, mediastinum or retroperitoneal tissues. Rarely the blood may re-enter the lumen of the vessel, pro-

ducing a double-barrelled tube, said by Osler[8] to be the most remarkable reparative process seen in the body. A new lining forms in the new channel by organization to fibrous connective tissue of a thin layer of thrombus deposited on the damaged surface and by extension of the endothelium into the new channel from the mouths of ruptured aortic branches, as described by Shennan[1].

The generally accepted explanation for the dissection was that it arose on the basis of atheromatous changes in the aorta. But since most dissecting aneurysms begin in the ascending aorta, where atheromatous changes are not prominent, and may occur in younger individuals, it has cast a considerable element of doubt as to the importance of this factor. In Shennan's series of cases, 109 out of 218 recent dissecting aneurysms had atheromatous changes present and of these in only six instances did the dissecting aneurysm begin at the base of the atheromatous ulcer. In the group reported by White and his associates, in four cases the primary intimal tear was on the basis of an arteriosclerotic ulcer, but in none of these did it occur in the ascending portion. They conclude that although arteriosclerosis is one of the causes of dissecting aneurysms, it is responsible for only a small percentage. Arteriosclerosis was present in five of our cases.

Shennan,[1] after a very extensive review of the possible factors, concluded that the most important determining factor in the causation of dissecting aneurysms is degeneration of the media, due in most cases to the selective actions of toxins of the most varying kinds on the muscle fibers, followed by degeneration of the elastic tissue; these associated with hyaline, mucoid, or apparently serous degeneration of the connective tissue. This type of lesion predominated in White's[3] series and usually results in cyst formation or what has been termed "faults" produced by various toxic agents associated with previous infection.

Syphilis apparently plays a minor role in dissecting aneurysms. The changes produced by syphilis largely in the adventitia and outer third of the media are readily productive of saccular aneurysms but not dissecting aneurysms. The idea is also advanced that there is a specific mesoarteritis in vascular syphilis which causes a fusion of the layers of the media, thus welding together the lamellae of this coat and making splitting almost impossible. Osgood, Gourley, and Baker[4] consider the association of syphilis merely a coincidence, pointing out that it is no more common in this condition than in the general population. After an analysis of the available data, they conclude that hypertension is by far the most important factor in the pathogenesis.

In this group, hypertension was present in four cases, not determined in one, and the other was septic. Definite arteriosclerosis was present in five of the six cases, and associated with anatomic evidence of syphilis in four cases. It is our impression that hypertension and the changes of arteriosclerosis are the most important factors in pathogenesis.

The immediate exciting cause of the dissecting aneurysm, acting in the presence of a diseased aorta, is generally a sudden increase in blood pressure produced by exertion, straining, or excitement. In one case the pain developed while walking.

Approximately 70 per cent of the intimal ruptures begin in the ascending aorta, 20 per cent in the transverse arch, and about 10 per cent in the descending aorta. In this group, the intimal rupture occurred in the ascending aorta in four cases, descending aorta one case, and the transverse aorta once. In discussing the location of the primary rupture, Shennan[1] places considerable importance on the effect of the repeated diastolic recoil, reflection of the pericardium, and relationship of the pulmonary artery, right main branch, to the upper part of the ascending aorta. He assumes that these factors place greater strain on the ascending aorta and at certain points, thus increasing the incidence of tears and determining their location.

SYMPTOMS

Dissecting aneurysms are characterized by sudden onset, usually following exertion, excitement, or injury, with severe pain beginning in the chest, occasionally in the abdomen and radiating to the abdomen, lumbar region, shoulder blades, neck or the arms. The pain is described as sharp, tearing, or as if something had given way inside. Hamburger and Ferris[5] report six patients with dissecting aneurysms, only two of whom suffered severe pain, the outstanding symptom being syncope or weakness. Prostration and shock usually follow with loss of consciousness and dyspnea. The severe pain may continue throughout the course of the disease up to death, particularly so if the dissection is extensive or if external rupture occurs early. Rarely the pain may subside and with internal rupture not recur. Often there may be relief from pain for a period of days or weeks followed by sudden recurrence with collapse and death due to extension of the dissection and external rupture.

Hypertension is generally present and usually persists. In those patients seen during the period of shock and who expire early, there is generally anatomic evidence of pre-existing hypertension.

Dysphagia occurs as the result of the direct pressure of the sac upon the esophagus or from involvement of the inferior laryngeal nerve. Hoarseness occasionally is present, usually the result of hemorrhage into the mediastinum.

PHYSICAL FINDINGS

Physical examination reveals an individual suffering considerable pain, apprehensive and frequently in shock. There may be dyspnea and cyanosis. The pulse rate may be normal, or rapid, and the blood pressure is generally elevated, though it may be low or normal as a result of the state of shock.

The heart generally shows left ventricular enlargement resulting from hypertension and the supracardiac dulness is broadened. Murmurs may or may not be present. An aortic diastolic murmur may develop due to relative insufficiency of the aortic valve caused by dilation of the ring, following upon dissection of the aortic coat down to the valve cusp.

Inequality of the pulse in the extremities may be noted and is an important sign. It is due to the dissection involving the vessel to that extremity. Hamburger and Ferris[5] report a case with increase in the volume of the pulse in the left common carotid artery with tenderness along the course of the vessel. They explain this on the basis of a spontaneous periarterial sympathectomy due to the dissection, with a resulting dilation of the vessel similar to that which follows surgical sympathectomy. Involvement of the branches of the aorta may produce obstruction, resulting in coma, hemiplegia, gangrene of the extremities, paralytic ileus or anuria.

Roesler, Gifford and Betts[6] call attention to the appearance of an area of pulsation which shifts rapidly and is associated with rapid changes in the roentgenologic appearance of the aortic shadow. They also call attention to the roentgenologic diagnosis, stating that if the newly formed aneurysm involves only a part of the circumference of the aortic vessel and has a predominantly lateral location, with respect to the direction of projection, it will be visualized as an outer, lighter shadow, usually of fairly even width, superimposed in a shell-like fashion upon the aortic shadow proper. The latter then appears as a more dense nuclear shadow, the size and shape of which is commonly, though not necessarily altered in the sense of dilation, fullness and tortuosity.

In discussing the roentgenographic features, Wood, Pendergrass, and Ostrum[7] made these observations:

1. There is a deformity of the supracardiac shadow. Frequently an arcuate excrescence extends outward from some point in the aortic arch. This shadow may or may not pulsate.

2. The shadow produced by an extension of the dissection along one or more of the large branches of the aortic arch is probably the most pathognomonic roentgenologic sign.

3. Displacement of the esophagus and trachea may occur.

4. The heart is usually enlarged.

5. Fluid is frequently present in the left pleural cavity. Non-fatal rupture of the aneurysm into the left pleural cavity occurs quite often in these cases.

6. Non-fatal rupture of the aneurysm into the periaortic tissues may produce a bizarre roentgenographic appearance.

The white cell count is generally increased, 15,000 to 30,000, with increase in the neutrophils. White cell count on three of my cases were: 8,800, 18,600 and 33,050. The last count was due largely to infection of the aneurysmal sac and contents. Osgood, Gourley and Baker[4] consider an increase in the icterus index due to bilirubin formation from hemoglobin destruction in the clotted blood, as the most valuable laboratory change, when present.

The electrocardiogram shows nothing characteristic of this condition, but is helpful in diagnosis by exclusion of coronary occlusion. Frequently there is left axis deviation and evidence of myocardial disease. Hamburger and Ferris[5] reported a case of dissecting aneurysm of the aorta with electrocardiograms simulating those of acute coronary occlusion, and attributed to partial occlusion of the right coronary artery by blood surrounding the vessel. Osgood, Gourley and Baker[4] reported a case with electrocardiograms simulating coronary occlusion with infarction, in which no myocardial infarct was found. An electrocardiogram was made on one case of this group. The cardiogram was essentially normal, and aided only in excluding coronary occlusion.

DURATION AND PROGNOSIS

Undoubtedly many patients die immediately, the internal rupture being almost simultaneous with the external rupture. In Shennan's[1] collected cases the duration of life after onset varied from a few hours to five weeks. In the White[3] et al. series, duration in ten of thirteen acute cases averaged 4.15 days. In the other cases the duration was 105, 56, and 36 days. In our group, the average duration of those cases that ruptured was 8.75 days.

Death is due to external rupture in 95 per cent of the cases. In about 70 per cent, rupture is into the pericardial sac, next into the left pleural cavity, into the mediastinum, and occasionally into the right pleural cavity, the abdominal cavity or the retroperitoneal tissues. White[3] et al. reported one death due to complete occlusion of the aorta near its bifurcation without rupture, and one due to anuria of unknown cause. In our group, death was due to rupture into the pericardium in three cases and the left pleural cavity in one case. In one case, death was due to sepsis resulting from a streptococcal infection in the aneurysmal sac.

DIAGNOSIS

Dissecting aneurysm must be differentiated from coronary occlusion, embolism, syphilitic aneurysm, and surgical abdominal emergency.

In one of our cases the diagnosis of surgical abdominal emergency was made and laparotomy was performed. This diagnosis is suggested by the abdominal pain resulting from involvement of the abdominal aorta, but the suddenness of the severe pain, its duration, radiation, history of hypertension, and absence of previous abdominal complaints should suggest the correct diagnosis.

Syphilitic aneurysm should be readily differentiated except in those cases seen after sudden death from rupture. Syphilitic aneurysms rarely cause sudden symptoms and are not necessarily associated with hypertension. The physical and roentgenologic findings should make the differentiation clear.

Embolisms, pulmonary, or of some other part of the body, may be confusing, but they usually occur in patients who have been confined to bed and have some evident source of the embolism.

Coronary occlusion perhaps offers the most difficulty or at least must be excluded in making the diagnosis. The character of the pain in coronary occlusion is different,

being described as constricting, while that of the dissecting aneurysm is tearing. The pain of coronary occlusion seldom radiates to the back and never to the lumbar or sacral regions as in dissecting aneurysm. The signs of pericarditis, fall in blood pressure, congestive failure, and typical electrocardiographic changes all indicate coronary occlusion. The frequent persistence of the hypertension and the evidence of obstruction of the arterial circulation to some part of the body suggest dissecting aneurysm. Osgood, Gourley, and Baker[4] place considerable emphasis upon the elevation of the icterus index as found in dissecting aneurysms as a differential point. Anemia, unexplained aortic insufficiency and fluid in the left pleural cavity, following an attack of supposed thrombosis, are findings suggestive of dissecting aneurysm. If this fluid is blood, one's suspicions should be definitely aroused.

TREATMENT

There is no satisfactory method of treatment. Absolute rest in bed with the hope that internal rupture into the lumen of the vessel may occur, should be insisted upon.

SUMMARY

Six cases of dissecting aneurysms with autopsy findings are reported. The relationship of arteriosclerosis and hypertension and dissecting aneurysms is pointed out.

The sudden development of acute pain in the chest or abdomen with wide distribution, followed by collapse and associated with cardiac enlargement and hypertension in an individual 40 years of age and older, should suggest the diagnosis of dissecting aneurysm.

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DISCUSSION

Dr. John H. Musser (New Orleans): Dr. Hargrove has had quite a unique experience in having had six patients who died of dissecting aneurysm. He says in his paper that at autopsy this condition occurs a bit more frequently than apparently we can judge from our clinical practice. In a large series of cases the condition was found in about 0.18 per cent of 3400 autopsies. I wonder if the large number of cases, relatively speaking, discovered at autopsy is not due to the fact, as he has pointed out, that many of these patients died a sudden death, consequently they became coroners' cases and an autopsy was performed. I really believe that dissecting aneurysm is less common than 0.18 per cent of all deaths.

I was quite interested in his statement that syphilis plays an insignificant role in the production of this condition, and yet in his six cases, four had syphilis. It has been my experience that patients I have seen who had dissecting aneurysm have almost invariably had syphilis. I wonder if it is not a theory rather than a fact about the syphilitic, that it is not so that they do not have dissecting aneurysm.

With regard to the diagnosis: it sounds very easy to make a diagnosis by following the criteria outlined by Dr. Hargrove, yet I am quite willing to confess and am quite willing to place a small bet with Dr. Hargrove that these cases are very rarely diagnosed correctly, and that generally the diagnosis is made of coronary occlusion. Some of the facts he pointed out are really of no help in the early diagnosis, for example, the persistence of hypertension. Yet, as he says in his paper, hypertension is not present during the acute stage of shock, and these patients, in spite of the fact that his six people lived eight and a half days, usually die promptly without coming out of shock.

I am quite sure that the diagnosis of coronary occlusion is made frequently wrongly in people who die suddenly who have this type of aneurysm.

One other point I want to bring out. Several of these patients were young, one 28 years old. As a rule, the disease does attack older people and it is quite unusual to find a man at autopsy who has passed but a few of the required years of life and who has died as a result of this condition. The explanation is that the two patients were young syphilitics, and when they died, at autopsy they were found to have dissecting aneurysm.

I think Dr. Hargrove has done us a real favor by pointing out the importance of this condition. It is quite possible that the coronary occlusion phase is more likely to occur to us in view of the fact that so many deaths from coronary occlusion are sudden deaths, but we should bear in mind that it is possible for the cardiac patient to die suddenly of dissecting aneurysm and not of coronary occlusion.

Dr. W. R. Mathews (Shreveport): A problem of considerable interest in this disease is the identification of aortic lesions which are important in the dissection. Older views held that atheromatous cracks in the intima, and syphilis, were largely responsible. In sixteen years at Johns Hopkins, Osler had seen two aortic dissecting aneurysms, both of which were thought to have developed on the basis of a luetic mesaortitis. Such an observation indicates both the rarity of the disease and the view, as to etiology, of a distinguished clinician who had had a large autopsy experience. At the present time there is no unanimity of opinion regarding syphilis as a causative factor. It probably plays little or no part when unassociated with medial degeneration or necrosis of another origin.

Dr. Hargrove has already pointed out the greater incidence of ulcerated atheromata in divisions of the aorta where dissecting aneurysms are uncommon and, also, the infrequency of the dissection commencing in an ulcer. It might further be pointed out that the intimal tear is usually clean cut, giving the impression of having been cut by a razor. If the dissection involves an ulcerated atheroma one is justified in assuming that it may have permitted passage of blood into the aortic wall with consequent dissection. In the presence of hypertension this probably is one of the mechanisms by which dissecting aneurysms form.

Probably a more frequent mechanism is the rupture of one or more vasa vasorum into the degenerated media with the formation of a hematoma. The high pressure within the aorta tends to propel the blood in the media along and around the vessel. If an intimal tear develops it is probably an effect rather than the cause of the condition. The blood in the media splits the atheromatous intima and empties into the lumen before it ruptures externally. The possibility of this mechanism makes it difficult if not impossible to evaluate atheromatous cracks as the starting point of dissecting aneurysms.

Medionecrosis with or without cyst formation is an important factor in both the development of dissecting aneurysms and rupture of the aorta.

Rarely the lesion develops on the basis of a congenitally defective or hypoplastic media. Overdistention of the vessel due to increased intravascular tension results in rupture of the intima. However, rupture of the aorta is probably more frequent in this condition than dissecting aneurysm.

Dr. Allan Eustis (New Orleans): I want to emphasize one point for those who are not familiar with this condition; who have not seen cases of dissecting aneurysm. We should differentiate distinctly in our minds between ruptured aortic and dissecting aneurysms. As Dr. Musser said, this is an acute condition, an acute tear of the intima; blood oozes between the layers of the aorta and down through the dorsal aorta, into the pericardium, and even burrows at times into the layers of the innominate artery. This is quite different from ruptured aortic aneurysm.

There was one case, a man of 65 years of age whom I had observed for twenty-five years, with chronic valvular heart disease; he was overresponsive to the cardiorespiratory test, his systolic blood pressure mounting to 220 from 150. Before the attack this patient had been addressing a church meeting when he suddenly collapsed; he became deathly pale and began vomiting, but did not lose consciousness. He was moved to Touro where I saw him one hour later and made a diagnosis of coronary occlusion. Dr. Heninger, however, ran an electrocardiogram and said I was wrong, that it was not coronary occlusion. I asked him, "What is the matter?" You could not feel the patient's pulse. The intern who had seen a case of dissecting aneurysm on Dr. Musser's service, made the diagnosis of "dissecting aneurysm." The man lived twelve hours. The symptom of severe abdominal pain of which he had complained was explained at postmortem, when a dissecting aneurysm extending down the dorsal to the abdominal aorta was found. I simply wish to repeat what Dr. Hargrove and Dr. Musser said: "Before you make a diagnosis of surgical abdomen, think of the probability of a dissecting aneurysm."

Dr. Willard R. Wirth (New Orleans): I have recently had the fortunate experience of making a diagnosis, antemortem, of dissecting aneurysm on a patient seen with Dr. Folse and Dr. Martin of Donaldsonville, fortunate, because I was able to watch the patient sufficiently long to follow certain clues and make the diagnosis. Of course, the diagnosis has not been proved as yet; the patient is still alive after four and a half weeks. This man had apparently an acute coronary occlusion with infarction: pain in the chest, with sudden onset. The electrocardiogram was negative shortly

after the onset, and another one in twenty-four hours was again absolutely negative. This man was 52 years old, and a known hypertensive of quite long duration.

After the second electrocardiogram was negative, I suggested the possible diagnosis of dissecting aneurysm. I went back to the patient then because of the negative electrocardiogram, bearing in mind, however, that I have seen cases of proved coronary occlusion in which the electrocardiogram was not typical until forty-eight hours, and one case seventy-two hours after the apparent onset of occlusion. Frequently in these cases there were changes in the electrocardiograms, but not typical enough to make a definite diagnosis of occlusion. I went back to the patient with this idea in mind, and found out the difference in systolic blood pressure in the two arms, and as we watched the man we found the difference increasing, and found a definite difference in pulse volume in both arms with a distinct weakening, a decrease in volume in the right radial as compared with the left, the right blood pressure being lower than the left. We watched the development of aortic regurgitation. A systolic murmur was present at the aortic area and a soft diastolic murmur which increased, and there is now a marked to-and-fro murmur. The temperature went to 103° and that was another thing against the diagnosis of occlusion. The leukocyte count reached a maximum of 12,000. The man now has definite capillary pulsation from the aortic regurgitation, a psychosis which we believe due to pressure or dissection into the carotid, and all the signs of a dissecting aneurysm.

The unusual duration of this particular case is interesting, although there have been cases said to last years and terminating eventually with rupture. This man, however, because of his irrationality has on several occasions gone through tremendous effort, being restrained.

The frequency with which antemortem diagnosis is made is interesting, there being only fifteen authentic cases in the literature of antemortem diagnosis.

I think the electrocardiogram is helpful in a negative way. A negative electrocardiogram with an onset simulating coronary occlusion is very suggestive.

Dr. B. R. Heninger (New Orleans): To me this subject is very important because of the fact that the profession, particularly the internists, appreciate this condition and seem to be more mindful of it at this time. I am sure that in the last year there must have been found in the literature some twenty or thirty odd cases of dissecting aneurysm that came to my attention in the different reports of Roesler, Paullin and others, and there are some interesting features of this subject that impressed me, first, the cases I have seen and the case Dr. Eustis mentioned. Just last week, at the clinicopathologic conference at the Medical Center, a case of a colored man of 34 with dissecting aneurysm was diagnosed antemortem by the intern on the Tulane service and proved at the autopsy table.

I agree with Dr. Musser that the diagnosis is difficult. On the other hand, in the past four to five years I have had experience with four to five cases of dissecting aneurysm, and I am inclined to agree with Dr. Hargrove that syphilis plays a small part in the etiologic background of dissecting aneurysm. But there are two important things that I believe should be practically always present in dissecting aneurysm, and these are changes in the aorta, particularly in the median coat, and hypertension. Now, the diagnosis of dissecting aneurysm depends on the stage in which the patient is seen. For instance, I would classify dissecting aneurysm into two parts. The initial stage, namely the actual splitting of the coats of the aorta is associated with excruciating pain which may be either abdominal or thoracic. In the case which was just mentioned and which was seen last Wednesday at the conference, the pain radiated toward the right scapula and the evidence leading to the diagnosis was for the clinical history of aortic disease accompanied by aortic valvular disease. The initial rupture or splitting of the layers of the aorta is accompanied by shock, falling of the blood pressure and in that particular, we may err by considering the case as one of coronary thrombosis with or without infarction. In the event the patient survives this initial stage, the picture assumes an entirely different aspect, the excruciating pain is alleviated, there may be a low grade temperature with leukocytosis, and in some instances the electrocardiogram may suggest coronary disease, but the use of serial cardiograms will frequently lead to the correct diagnosis. At this time, I remember distinctly a man with a dissecting aneurysm of the abdominal aorta who drove an automobile over 100 miles and upon arrival at Touro, the clinical picture noted first was entirely different from that noted four days later at the time of death. Serial cardiograms in this particular case ruled out coronary infarction and at the autopsy table a dissecting aneurysm was revealed.

So, we must keep in mind the possibility of dissecting aneurysm as a clinical entity, and, secondly, we must take into consideration the change in the clinical picture of a dissecting aneurysm from the initial onset accompanied by pain and shock from what I term the second stage in which the patient survives the initial onset and there is some relief of the pain and other manifestations, commonly seen with the initial splitting. These changes from the first to the second stage, I feel certain are the source of any errors in our antemortem diagnosis.

Dr. M. D. Hargrove (In conclusion): Our conclusions that the major factors in the pathogenesis are hypertension and arteriosclerosis may be wrong

when we consider that four of the six patients had syphilis and five had gross evidence of arteriosclerosis. It is my impression though, that syphilis, since its effects are confined to the adventitia and the outer third of the media, would be less likely to cause dissecting aneurysms.

I would not leave the impression that I feel that diagnosis is at all easy. None of these six cases were diagnosed antemortem. I must confess that I saw one of the patients, the 28 year old negro male, and missed the diagnosis.

The electrocardiogram must not be completely relied upon in the differential diagnosis of coronary occlusion and dissecting aneurysm. If negative, it may be definite, but if positive the differentiation is not absolute. There have been a few cases of dissecting aneurysms reported in which the electrocardiogram has been rather characteristic of coronary occlusion. This is explained on the basis that because of proximal dissection of the aneurysm there has been interference with coronary flow. Osgood reports such a case.

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THE NEW OFFICERS

Again it is the pleasant duty of the Journal to extend felicitations and congratulations to new officers of the State Medical Society, elected at the recent meeting in Alexandria. The Journal also wishes to express its pleasure at the re-election of many who have served faithfully and well in the organization.

We have already written about Dr. Lorio who is the new President. Of Dr. C. Grenes Cole, the President-elect, much may be said that is favorable and nothing that is unfavorable. A true gentleman, a thoroughly delightful person and a raconteur unsurpassed, Dr. Cole will bring to the presidency attributes which will make for the smooth running of the organization and for the accomplishment of many desirable attainments. Dr. Cole is not only a physician of reputation, he is also an excellent executive. He has shown this, as coroner of the City of New Orleans, in the able way in which he has conducted this office.

Dr. D. B. Barber was elected First Vice-President. Dr. Barber, as General Chairman of the recent enjoyable meeting in Alexandria, labored hard and faithfully to make the convocation the success that it was. We are indeed glad this expression of appreciation goes to him. As Second Vice-President Dr. E. L. Zander was elected; he is a man of deserved popularity in New Orleans and throughout the state. As Third Vice-President Dr. J. P. Mauboules will function. This country practitioner is known throughout the state for his ability and his accomplishments. He has been for an untold number of years a member of the House of Delegates and always he has been attentive and faithful to his duties.

Dr. C. C. deGravelles, Dr. Rhett McMahon, Dr. Claude A. Martin and Dr. W. F. Couvillion were re-elected as Councilors for the 3rd, 6th, 7th and 8th Districts, respectively. These gentlemen have been active for many years in organized medicine, have always been liked and have always been interested in the welfare of the State Society, particularly through their District organizations.

Dr. J. Q. Graves, who has served faithfully and intelligently as Delegate to the American Medical Association, was re-elected. Dr. A. A. Herold was elected to serve the unexpired term of the late lamented Dr. Seemann. Dr. J. B. Vaughan was chosen as alternate to Dr. Graves and Dr. C. L. Peacock as alternate to serve Dr.

Herold's unexpired term. Our representatives in the House of Delegates can be counted upon to maintain the high standards that we have expected and get from the Louisiana delegation to the parent organization.

On the various Committees most of the men holding office were re-elected. Dr. F. E. LeJeune replaces Dr. Herold on the Committee on Scientific Work. Dr. H. B. Alsobrook and Dr. Rhett McMahon are two new members on the Committee on Public Policy and Legislation. We are particularly pleased that Dr. H. W. Kostmayer was chosen to serve Dr. Seemann's unexpired term on the Journal Committee. Dr. Kostmayer has always been most active in furthering the interests of the Journal and with his previous experience as Chairman of this Committee he will be a welcome addition. On the Committee on Medical Defense, and Committee on Health and Public Instruction, and Committee on Hospitals, all the present members were re-elected. Dr. D. T. Martin, however, replaces the late Dr. Signorelli.

We feel the work of the Society and its future is in excellent hands. May all future elections be as happy as this last one.

THE WAGNER BILL

The Wagner Health Bill was presented before the House of Delegates of the American Medical Association at the recent meeting of this organization. Without a dissenting vote the House rejected approval of this proposed health act. The reasons for condemning the Wagner Bill are so definite, so succinct and so well grounded that it will not be amiss to review the report adopted by the Reference Committee of the House of Delegates.

Amongst other things it states that this health bill does not safeguard in any way the continued existence of the private practitioner. These doctors have always brought the people the benefits of scientific research and treatment. The Bill does not provide for the use of the innumerable beds that are now available in hospitals of all types. The Bill recommends Federal aid for medical care as a rule rather than an exception. The Bill definitely does not appreciate the fact that proper food, sanitary housing and other environmental conditions are necessary in order properly to prevent disease. The Bill insidiously promotes the development of a complete system of tax supported Government care. Although it does provide compensation for loss of income during illness, it proposes also to give complete medical services in addition to this compensation. It provides for supreme Federal control, the Federal agents having the authority to approve or disapprove of plans suggested by the various states. It does not call for any method to determine the nature and extent of the needs for preventive medical services for which it would allot funds. It implies by innuendo that any unfortunate health conditions in the United States are the result of unequal standards and irregular methods of medical practice.

These are a few of the reasons that the Reference Committee gave for opposition to the Bill. They have been quoted almost verbatim. The closing paragraphs will be quoted exactly:

"No other profession and no other group have done more for the improvement of public health, the prevention of disease, and the care of the sick, than have the medical profession and the American Medical Association.

"The American Medical Association would fail in its public trust if it neglected to express itself unmistakably and emphatically regarding any threat to the national health and well being. It must, therefore, speaking with professional competence, oppose the Wagner Health Bill."

SULFAPYRIDINE IN TREATMENT OF PNEUMONIA

Although the pneumonia season is presumed to be over, nevertheless, two weeks before this was written, the State Board of Health reported in its weekly bulletin 49 cases of pneumonia. Pneumonia in the

South does not have truly the same seasonal incidence as it does in the North, nor is it as common a disease. It is, however, sufficiently frequent that it is as likely to happen in the practice of any man as any other of the infectious diseases; consequently, every practitioner of medicine should be familiar with the recent work on sulfapyridine. The various national meetings that have been held in the past two months accentuated the importance of this very effective drug which has been reported upon fairly extensively in the literature and about which there will be very much more in the next few months. Even at the risk of tiresome repetition it might be well to review a few of the facts known about sulfapyridine, how to administer it and the dangers inherent in its use.

Just how sulfapyridine acts in pneumonia is not known definitely. It has an antipyretic effect and certainly stimulates the immunologic processes of the body to combat the infection, although in vitro it is not nearly as powerful as are many antibacterial substances. It is not a germicide in the true sense of the word; perhaps it may act in conjunction with an enzyme.

The drug is absorbed reasonably rapidly by the gastrointestinal tract although qualitative blood determinations do not show as constant an absorption as with sufanilamide. It is eliminated relatively rapidly. In a general way it may be said that blood concentration varies very much in different individuals, depending on the rate of absorption, the rate of acetylation and of elimination. A series of cases recently reported shows that the blood concentration is not as important a factor in the curing of pneumonia as it is with sulfanilamide in the cure of streptococcal infections.

In the scientific exhibit of the American Medical Association the dose generally recommended was two grams given every four hours for two doses, then a maintenance dose of one gram every four hours until the temperature had returned to normal and remained there for forty-eight hours; after this one gram was advised every eight hours for the next twenty-four hours. According to the report of Meakins and Hansen,* their average total dose was 27 grams but some patients received as much as 50 grams without any ill effect. Some authors advise a greater individualization and not the dogmatic administration of a definitely preconceived amount of the drug. Under any circumstance it is advisable to give a large initial dose because from time to time people become sulfapyridine-fast.

The response to sulfapyridine is often dramatic; dyspnea improves, cyanosis disappears, pulse rate falls, temperature drops and the patient shows marked general improvement. Occasionally, in cases that are gotten early in the course of the disease, the improvement is comparable to a crisis, although the physical signs still remain.

One of the difficulties of the administration of sulfapyridine is nausea which may be associated with severe vomiting. It is said to make difficult the taking of the drug by mouth in a third of the cases, but in only one out of every ten patients does it interfere with treatment. Vomiting may be controlled in part by giving salt solution intravenously. Sometimes it is necessary to give alkalies in large doses at the same time the drug is administered. The sodium salt of sulfapyridine has been found by many to be effective, given by rectum if the oral medication is prevented because of the severity of the vomiting. The drug has also been used intravenously but, inasmuch as it is apparently absorbed quite promptly from the rectum, this relatively dangerous procedure need not be employed.

Of the untoward effects of sulfapyridine treatment the most dangerous is a pronounced drop in the white cells and an acute hemolytic anemia. Consequently it is always advisable to follow the course of the administration of the drug with frequent blood counts. At times the drug produces kidney irritation as shown by hematuria and occasionally, but rarely, anuria. Toxic hepatitis may develop. Drug rashes are by

*Meakins, J. C. and Hansen, F. R.: The treatment of pneumococcal pneumonia with sulfapyridine, Canad. M. A. J., 40:333, 1939.

no means uncommon. Cyanosis occurs in about one patient of every twenty and can be controlled by methylene blue. Once in a while a patient complains of vertigo and headache and sometimes mental depression is rather pronounced. It is always a habit to report on the untoward effect of drugs but with care and caution the ill effects of sulfapyridine should not prove dangerous. As a matter of fact, the drug is so efficacious and so valuable in the treatment of pneumonia that these dangers should be minimized rather than magnified.

The question arises as to whether or not antipneumococcic serum should be given concomitantly with sulfapyridine. Men who have had the opportunity of seeing many cases of pneumonia advise giving the serum if it is available by type specificity. Some workers in the pneumonia field say it always should be given if bacteriemia exists, if there is extensive involvement of the lungs, if the patient is pregnant or if the patient is well on in years. This is the part of conservatism and this is the recommendation suggested in public. As a matter of fact there are private opinions given which hold that the use of serum is really not necessary. However, if suitable serum is available, until further clinical experience, it would seem best to give it.

There is just one further thought concerning the enthusiastic reports of the curative effects of this drug and that is: may it not be that pneumonia of the past nine months has been caused by relatively benign organisms? Has the severity of pneumonia this winter been less than usual? Will the pneumonia of next year yield as satisfactorily to sulfapyridine therapy as it has this past year? Perhaps it may be that sulfapyridine may not prove as effective in the treatment of pneumonia as is the present day experience.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

NORTH LOUISIANA SANITARIUM

Shreveport

The regular meeting of the North Louisiana Sanitarium Staff was called to order March 27, 1939 by Dr. George Wolfe, with twenty-two members present. The following committees were appointed:

Medical Committee: Dr. W. R. Mathews, Chairman; Dr. S. N. Nicholas, Dr. Clay Edwards.

Surgical Committee: Dr. J. R. Stamper, Chairman; Dr. C. R. Reed, Dr. J. E. Heard.

Records Committee: Dr. G. H. Cassity, Chairman; Dr. P. D. Abramson, Dr. L. W. Gorton.

Nursing School Committee: Geneva Peters, R. N., Chairman; Dr. A. A. Herold, Dr. C. E. Boyd, Dr. George B. Dickson.

Dr. S. M. Richardson, Jr., reported a case of pneumonia in which sulfapyridine was used. The physical findings and laboratory findings, including x-ray, were typical of lobar pneumonia. Sulfapyridine was administered and, in the course of 24 hours, the temperature had reached normal.

Drs. Webb and Wolfe reported several cases in which sulfapyridine had been used in children with pneumococcic pneumonia, and in which rather spectacular results were obtained. Dr. Wolfe reported such a case where the patient developed hematuria; the drug was discontinued and the hematuria promptly cleared up.

Dr. Youman reported the use of disulon in urinary tract infections with marked efficiency. Dr. Stamper commented on the satisfactory results obtained in the use of this drug.

N. J. Bender, M. D., Sec.

GRADUATE SCHOOL OF MEDICINE LOUISIANA STATE UNIVERSITY MEDICAL CENTER

New Orleans

The scientific meeting of May was called to order by Dr. James T. Nix, Dean of the Graduate School of Medicine. Dr. Bjarne Pearson presented the following paper:

COMPLICATIONS INVOLVING THE URINARY TRACT IN CARCINOMA OF THE CERVIX: AN ANALYSIS OF FIFTY-SEVEN NECROPSIED CASES

In an analysis[1] of 57 cases of carcinoma of the cervix which came to necropsy at the University Hospitals in Minneapolis, complications involving the urinary tract were observed in more than 75 per cent. Such complications, as other recorded studies prove, are of frequent occurrence in this variety of malignancy, and are deserving, in certain respects, of far more attention than they have hitherto received. It might be argued, perhaps, that because the present contribution involves only postmortem findings, the data are not likely to be of value to the living patient with carcinoma of

the cervix, but such an argument is not sound. Carcinoma of the cervix is a relentless, progressive disease which may present itself to the physician at any stage. Even a retrospective inquiry, therefore, into the unfolding of the pathologic changes associated with it should be of definite value.

The changes in the urinary tract which occur in carcinoma of the cervix can be conveniently discussed under several special headings, including: Stricture of the ureter, uremia, infections of the urinary apparatus, and carcinomatous invasion of the bladder. The occurrence and pathogenesis of each of these complications will be briefly considered on the basis of their occurrence in the 57 cases comprising this series, and in comparison with the data in other recorded series.

STRICTURE OF THE URETERS IN CARCINOMA OF THE CERVIX

Stricture of the ureters was the most common postmortem finding in the urinary tract in this series as in all other reported series. It occurred in 42 of the 57 cases, 75 per cent. Martin[2] believes that the advent of the stricture initiates the pain of which these patients usually complain, and which may radiate toward the kidneys, laterally toward the hip and groin, and posteriorly to simulate sacro-iliac disease. Because the manner of exitus is dependent upon anatomic changes in the urinary tract following in the wake of the stricture, Graves and his associates[3] examined their patients with opaque pyelography to determine the extent of the ureteral dilation.

The figures for ureteral stricture in other reported series of carcinoma of the cervix parallel or exceed those in my series. Thus Ernst Halzbach,[4] in 48 necropsied cases, found 10 unilateral and 31 bilateral ureteral strictures, with consequent hydro-ureter and hydronephrosis. Herger and Schreiner[5] found strictures in 21 of 32 necropsied cases.

Kundrat[6] laid the foundations of our knowledge of the mode of ureteral involvement in carcinoma of the cervix in his basic work on the spread of carcinoma in the parametria. This work occupied him for three years, and required the use of 21,000 serial sections made from 80 cases. Sampson,[7] continuing these studies, was able to point out that two chief factors were responsible for the ureteral strictures, infection and edema, plus external pressure from the carcinomatous mass about the ureters resulting from parametrial extension. Metastasis occurring directly into the ureter is rare, as Carson[8] has shown. In my material it occurred only three times, and in each instance was located in the midportion of the ureter, where it caused secondary constriction.

The question of whether massive irradiation might not enhance the occurrence of stricture at the ureterovesical junction has been raised by several authors. Before endeavoring to answer it, however, it is necessary to recollect certain anatomic considerations. Three anatomic points of narrowing are present in the normal ureter, these being located at the ureterovesical junction, the ureteropelvic junction, and the midportion. The diameter of the ureter at these points has been measured in large series of necropsied cases by Englisch,[9] Schewkuneko,[10] and Nixon.[11] In Nixon's study of 51 cases, the average diameter of the ureter at the ureterovesical junction was 0.35 cm., at the ureteropelvic junction 0.5 cm., and at the midportion 0.65 cm.

In order to study the effect of irradiation on the ureteral lumen at its narrowest point, Martin and Rogers[12] applied radium in needles alongside the ureters in dogs. They were able to produce complete stricture at the ureterovesical junction in 44 days with an application of 54.3 mg. hrs., and in 16 days with an application of 75 mg. hrs. Further experimental and clinical studies seem indicated to permit definite statements as to the effect of irradiation in the production of ureteral stricture in carcinoma of the cervix.

It was difficult to determine in my material whether irradiation of the parametria might or might not be responsible in some cases, at least in part, for the stricture and hydronephrosis present. One case in the series, however, suggested that this might be the modus operandi: A patient with an early carcinoma of the cervix, which was apparently confined to the cervix and was without parametrial extension, was treated by an application of radium to the cervix followed by extensive deep ray therapy to the parametrial regions. The malignant lesion completely disappeared. One year later she was admitted to the hospital with a high non-protein blood nitrogen, and died shortly thereafter of uremia.

At postmortem examination the cervix was smooth and apparently normal, as was the uterus, and serial sections revealed no evidence of the former lesion. Both parametria were fibrous, and the ureterovesical orifice barely admitted a small filiform catheter. The ureters were enormously dilated, and a high degree of hydronephrosis was present. Sections through the small intramural portions of both ureters showed a narrowed lumen entirely surrounded by fibrous tissue. In retrospect, it would seem that such a finding is entirely comparable to the marked fibrosis which may occur as the effect of radium anywhere else in the body.

Stricture at the ureterovesical orifice gives rise to varying degrees of hydro-ureter and hydronephrosis. In fact, there is a definite though rough parallelism between the degree of dilation and the severity of the supervening uremia. The experimental work of Zuzuki,[13] Keith and Snowden,[14] Rautenberg,[15] Johnson[16] and others has shown that the decrease in renal function, which is always progressive and gradual, is dependent upon the

length of time the obstruction has been present. Hinman,[17] in an extensive series of experiments on ureteral obstruction, has shown that complete hydronephrotic atrophy occurs in the rat after 120 days, in the rabbit after 300 days, and in the dog after 18 months.

It is interesting to note that the patients in this series who lived the longest were the ones who died in uremia. Elsewhere[18] I have shown that the average duration of life in the 57 necropsied cases which comprise the series was 57 months, whereas when the fatal outcome was due to uremia and peritonitis, which were the two major causes of death, the duration of life was respectively 29 months and 13 months.

UREMIA AS THE CAUSE OF DEATH IN CARCINOMA OF THE CERVIX

Very little was known of uremia as a cause of death in carcinoma of the cervix until 1854, when Beatty[19] brought the subject before the Dublin Pathological Society with the presentation of three fatal cases. In 1867 Saexinger[20] reported 62 cases of carcinoma of the cervix, in 28 of which marked symptoms of uremia were present antemortem; in all the cases in this group postmortem examination showed ureteral constriction. Saexinger pointed out that constriction of the ureters was brought about by the presence of a carcinomatous mass at the ureterovesical orifice, and, like Beatty, deplored the fact that so common a cause of death should not be mentioned by writers on uterine disease, although many of them must have observed the complication.

Lusk,[21] in the same year as Saexinger, made the first contribution to the subject in the American literature, in a presentation before the New York Medical Society. His discussion of uremia as a cause of death included a description of the underlying pathologic changes.

These changes are now well established, although by no means all cases of carcinoma of the cervix with ureteral stricture terminate fatally because of uremia. In my 57 cases, for instance, ureteral stricture was present in 42 cases, 75 per cent of the series, but in only 19 of these cases, 33 per cent of the whole series, was death due to uremia.

In all 19 cases there was clinical evidence of uremia. In 14 cases there was an increase in the blood metabolites, which were determined one or more times. In the remaining five cases the clinical course and symptoms were such as to preclude the possibility of any other cause of death. It is evident from the accompanying chart that there is a fair parallelism between the degree of blood metabolites and the extent of the hydronephrosis.

In the 19 patients in whom death was due to uremia there were 11 instances of marked bilateral hydronephrosis, five of moderate bilateral hydronephrosis, and one each of slight bilateral hydronephrosis, moderate right hydronephrosis, and moderate left hydronephrosis. In three patients there was no albumin in the urine, and in five others the findings were not recorded; albuminuria was present in the remaining 11 instances. In the six patients in whom the actual output of urine was measured, oliguria was present, which is usually the case, as Offergeld[22] notes, whenever actual measurements are made.

Histologic examination revealed that in the group of cases in which death was due to uremia, 75 per cent of the carcinomata were grade II. The normal distribution, in large series of cases of carcinoma of the cervix, places grade II at 20-25 per cent, and grades III and IV at 75 per cent. In other words, the normal distribution is reversed in the group of cases in which death was due to uremia. There seems no doubt, then, that in the specific case cited above the more slowly growing grade II carcinoma gradually extended into the parametria and slowly compressed the ureters, eventually causing hydronephrosis and uremia.

INFECTION OF THE URINARY TRACT IN CARCINOMA OF THE CERVIX

Although discussion still continues as to the route by which infection reaches the kidneys, it seems most logical to assume, in view of the pathology present in carcinoma of the cervix, that the majority of infections which reach the kidneys are lymphatic-borne. This theory is supported by the studies of Stohr[23] and Kumita,[24] who demonstrated deep and superficial lymphatics in the renal parenchyma, as well as a lymphatic connection between the renal pelvis and the ureters.

Regardless of the mode of ascent, however, certain factors predisposing to infection of the kidneys were present in all the cases of carcinoma of the cervix with urinary complications. These predisposing factors included: Urinary obstruction, invasion of the bladder by the tumor, with the production of fistulae; infection of the bladder; necrosis of the infected cervical tissue; and parametrial infections in patients with low resistance.

Hydronephrosis, with attendant stagnation, was present in 42 of the 57 cases, 75 per cent. In 13 cases, 22 per cent, there was definite infection of the kidney and pelvis. Pyelonephritis occurred in eight cases, chronic cystitis in 10, pyonephrosis in eight, vesicovaginal fistulae and gangrenous cystitis in four each, and edema in three. Two of the patients died as the result of an acute fulminating pyelonephritis.

CARCINOMATOUS INVASION OF THE BLADDER IN CARCINOMA OF THE CERVIX

Carcinomatous invasion into the bladder occurred in nine of my 57 cases, as compared with 10 of Faeber's[25] 150 necropsied cases and 56 of Williams'[26] 75 necropsied cases. Four of my nine cases terminated in vesicovaginal fistulae, as did 26 of

Williams' 56 cases. Blau[27] states it as his opinion that 50 per cent of all necropsied cases of carcinoma of the cervix will show involvement of the bladder, with a 33 per cent incidence of fistulae.

Gemell[28] insists that cystoscopic examination should be a routine part of the examination of patients with carcinoma of the cervix. It is my opinion that this simple procedure will furnish important information in the direction of therapy as well as in prognosis. The earliest changes to be seen in the bladder include bulging of the vesical floor, dilatation of the vessels, the presence of transverse ridges, and bullous edema. The edema soon breaks down, and actual tumor tissue is then apparent in the mucosa.

The appearance of the bladder in cases of carcinomatous invasion of the vesical tissue should be differentiated from its appearance when changes due to irradiation are present. These changes make their appearance two to four weeks after radiotherapy, and are manifested as an intense cystitis with multiple ulcerations. Findlay has made the point that when fistulae develop soon after irradiation, it is highly probable that carcinomatous invasion had occurred before the therapy was applied.

SUMMARY

1. My analysis of 57 cases of carcinoma of the cervix bears out the general opinion that in 75 per cent of such cases strictured ureters are present, with consequent hydronephrosis. The stricture is due to carcinomatous invasion about the ureter at the ureterovesical orifice, at which point the diameter of the lumen is smallest. A possible added factor is the effect of irradiation of the parametria. This factor cannot be properly evaluated at the present time, however, since properly controlled studies are lacking.

2. The first effect of the ureteral stricture is the development of hydronephrosis, with a progressive increase of renal insufficiency, and eventual uremia.

3. The average duration of life in the uremic patients in my series was considerably longer than in the non-uremic patients. This discrepancy can be explained by the rather characteristic tendency of carcinomata of low grade histology (grade II), which were present in 75 per cent of this special group, to evolve slowly and eventuate in uremia.

4. Examination of a composite chart of blood metabolites and pathologic changes reveals a fair parallelism between the degree of hydronephrosis

TABLE I.

SYNOPSIS OF FINDINGS IN 14 PATIENTS WITH CARCINOMA OF THE CERVIX WHO DIED OF UREMIA

Case no.	Interval between findings	Urea nitrogen	Creatinin	Uric acid	Albumin	Duration	Hydronephrosis
2	11 days	26.13	1.72		2+	30 days	Marked
		40.13	2.10				
5	4 "	51.33					
		105.47	3.26		0	9 "	Moderate**
11	—	70.93	6	6.9			
	9 "	83.6	4.4	6.7			
	3 "	131.6	6.8	9.5	1+	11 "	Marked**
12		56.93	4.75		0	2 "	Marked**
13	—	124.1	6.8				
	9 "	98.5	5.35	9.1	1+		Moderate**
15	—	26.13	1.4				
	7 "	86.8	1.6	7.7	2+	7 "	Slight*
21	—	85.9					
	4 "	109.3			2+	11 "	Marked*
24	—	78	5.7		4+	2 "	Marked
30	—	196.0			0	2 "	Marked NPN 223
27	7 "	265.5			1+	14 "	Marked NPN 170.8**
25			5.7	9	1+	?	Moderate***
34		46.8	3.75				Moderate
46		108.			2+		Marked***
47		101.					Moderate*

** = marked oliguria. *** = anuria. * = vesico-vaginal fistula.

Composite table showing blood metabolites and albumin present in 14 of 19 cases in a series of 57 cases of carcinoma of the cervix in which death was due to uremia. The five cases in which blood metabolites were not noted are omitted. The degree of hydronephrosis, oliguria, and anuria are noted by symbols.

present and the values for the blood metabolites. Oliguria and anuria were common terminal findings in those cases in which the daily output of urine was measured.

5. Twenty-two per cent of 57 patients showed some infection of the urinary tract, and two patients of this group died as the result of a fulminating pyelonephritis. Factors predisposing to the ascent of infection in the urinary tract were present in all these cases.

6. Invasion of the bladder by the carcinoma occurred in nine of the 57 cases, and terminated in vesicovaginal fistulae in four. More attention should be paid to early carcinomatous invasion of the bladder, which should be differentiated from the changes which occur as the result of irradiation.

7. In view of the underlying pathologic changes, a plea is made for more careful genito-urinary investigations in every case of carcinoma of the cervix to aid in determining the extent of the disease.

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HUTCHINSON MEMORIAL CLINIC

New Orleans

Scientific Session conducted by the Division of Psychiatry, Department of Medicine, Dr. T. A. Watters presiding.

On account of the illness of Dr. C. H. Hamann, the first discussion on "How a General Clinic Can Best Use Its Psychiatric Personnel" was not presented.

Some Emotional Disorders in Children (Dr. L. A. Golden): Child psychiatry, as a special branch of medicine, became more closely defined about thirty years ago. Under the auspices of the National Committee for Mental Hygiene, several demonstration clinics were established in various cities, and as their value to the community, school and parents became obvious, their popularity spread throughout the country. The broad interests of the child psychiatry clinic encompassed problems created by social, medical and psychologic maladjustment and its effect on the behavior and mental health of the child.

A wide range of disturbances is encountered in such a clinic. These may include minor or major psychoses, habit spasms, truancy, lying, stealing, appetite disturbances, fears, enuresis, school failure and other disturbances of behavior and personality related to faulty training, emotional maladjustment, or organic disease.

Such children are not distinct from those that are brought to the pediatrician. For that reason, we are especially fortunate that our child psychiatry set-up is integrated into the Pediatrics Clinics. With such mutual cooperation, we can best study the child as he reacts to organic disease and emotional disorder, see the implications of each of these at work in the child as a total person. Needless to say, such a broader realistic approach, viewing the child as a growing personality, understanding his emotional needs as well as his organic needs, allows a more fruitful approach to therapy.

The following case has been selected as an illustration of the many factors which combined may

produce the problem for which a child is brought to a pediatric or psychiatric clinic. It is during the process of treatment that the relationship between the problem presented and its component factors becomes evident, for often no connection between these factors is suspected by the parents at the time treatment is begun.

A 12 year old boy was brought to the clinic by his mother because of nervousness and lack of interest in school. The nervousness had increased during the past four years. Temper tantrums had been present from early childhood, and the week before he came to the clinic, he had bumped his head and tried to bite himself in a fit of temper during an argument with his sister. He had developed the habit of whining constantly for everything he wanted, and his mother said that when she bought his sister a pair of new shoes he cried like a baby all the way home because she would not buy him a pair. In school he was inattentive and acted like a child of five or six years. He whined and cried, and refused to play with children his own age. His only playmates were little children five or six years younger than himself. His school record was so poor and consisted of so many grade repetitions, that the question of mental defect had been raised.

Physically, the boy was negative. Past history indicated a normal development and he was found to have no abnormal ideas, phobias, or obsessions. Laboratory findings were negative, and neurologically he was entirely normal. Psychologic testing revealed an alert and interested boy, whose test performance and behavior were in marked contrast to the reports of his school work and his behavior at home. He was friendly, pleasant, and spontaneous, and eager to make a good impression. His test rating proved him to be of good intelligence, and mentally capable of school work in advance of his present grade.

Testing also revealed the presence of a severe reading disability which prevented his succeeding in school work, and which, if not corrected, would prevent further school progress. The results of the psychologic tests ruled out the question of mental defect, and established the presence of reading disability as a factor in the adjustment problem which had not been taken into consideration previously.

Investigation of the home situation brought to life conditions which were found to be positive contributing factors toward the boy's maladjustment. His mother is a dominant, masculine type of woman, with certain morbid trends, and with no interest in domestic affairs. She not only dominated her children but their father also. Her overprotection of the child seemed part of her pattern of aggressiveness in every situation involving the members of her family. She was inconsistent in her discipline, and had never allowed him to do anything for himself. She still gave him help in dressing, discouraged his playing with other children, and taking his own part in quarrels, and tried not only to help him with his lessons, but actually to learn them for him. Both she and her husband seemed to show a preference for their other children, a girl two years the patient's junior. The patient felt very keenly this rejection by his parents, and this showed itself in his frequent quarreling and fighting with his sister who was held up to him as a model. The basis of his mother's rejection seemed to be the patient's likeness to his father, a likeness which was essentially his lack of aggressiveness and his inability to compete with others on an equal footing—in contrast to her own great need to dominate a situation. The fact that he had no playmates of his own age was in reality a source of great concern to him, and had aroused feelings of inferiority. He was branded as a "sissy" by his schoolmates, who had given him such names as "Sally Ann" and "Touch-Me-Not." Neither the pupils nor the teacher realized that his inability to be a good mixer resulted from the fact that he did not know how to play with children.

Treatment has been carried on at regular intervals from the time of his entrance to the Clinic in June, 1937, up to the present time. The plans and procedures for treatment grouped themselves under four main headings. The first of these consisted of direct and intensive work with the boy by the psychiatrist. Frank discussion was held with him of his infantile reactions and the need for conducting himself like a big boy rather than a baby. He showed from the first a real desire to improve and to be like other boys. He gradually developed a feeling of security in his relationship with the psychiatrist, whom he regarded as some one to whom he could turn for advice, approval, and understanding. He was encouraged to feel that any success in overcoming his infantile habits and his unacceptable behavior at home and in school was a triumph.

St. Mark's Community Center provided the much needed opportunity for group activity. Here he began to wrestle, and participate in other athletic events which were new experiences for him. After some months of attendance at St. Mark's Community Center, he won the wrestling championship, and this success was further proof of his developing manliness and self-confidence. In regard to this event, the child told the psychiatrist proudly, "I took some awful punishment for about eight minutes and didn't even cry."

Psychiatric treatment of children is of little value without the cooperation of the parents, and their complete acceptance of the treatment program. This case was no exception to the general rule, and much time and effort were expended in securing the mother's active participation in our plans. The father was also a part of the treatment program, as it was felt that the child needed the strength and security of a close father-son re-

lationship. The father's response to the psychiatrist's suggestions was shown by his change of attitude toward the boy, a new interest in the child's activities, and the little attentions which, coming from a father, help a boy of this age to gain the recognition he so greatly craves.

An effort was made to interpret to the mother, over a period of months, the necessity for helping the child to achieve independence in regard to dressing himself and preparing his own lessons, and in assuming responsibility for himself and for his actions. It was difficult for her to relinquish her place as the dominant factor in the child's life, and, consequently, she continued to dominate him, in spite of an expressed willingness to cooperate in our plans. This was shown by her continuing to prepare his lessons for him and by her marked unwillingness to recognize any improvement made in his behavior. In spite of this fact, his improvement was obvious to the clinic, and to his teachers in school.

Since school progress depended on his ability to read, remedial reading instruction, as part of the therapeutic program, was begun soon after his first visit to the clinic, and has been continued up to the present time. This instruction not only improved his reading, but taught him to think for himself, increased his self-confidence, and improved his effort. Because of the remedial reading instruction, he was enabled to keep up with his class for the first time. His improved reading ability made him more a part of the classroom group, and his attitude toward both teacher and classmates showed a favorable change. A recent report from his teacher states that she finds the child much improved in his ability to get along with other children. He is accepted by them and now plays with a group his own age, whereas he formerly played with only one or two of the younger children. She finds that he is much more spontaneous, and that he now relates what he learns in reading to outside activities. He frequently brings to school souvenirs that his father has sent him from his sea trips. He enjoys out of school activities with boys his own age.

At the present time, most of the symptoms for which the child first came to the Clinic have entirely disappeared. There is only an occasional tendency to cry when disappointed and he no longer whines. The mother has at last discontinued helping him with his lessons and allows him more freedom and independence of action. Through her contacts with the clinic she has gained some insight into the relationship between the child's former behavior and her treatment of him at that time. The father-son relationship is apparently satisfactory. Because of the child's greater security at home and at school, the friction between him and his little sister has ceased, for he no longer feels that any affection shown her by his parents is a threat to his own relationship with them. He is beginning to feel that he can compete with other boys his age, both in the school room and on the playground. He has acquired some poise, and seems alert and interested in all that goes on around him.

This type of case is frequently seen in a Pediatrics or Child Psychiatry Clinic. Many of the contributing factors are not recognized in the beginning and become evident as treatment progresses. This problem can be summarized as that of failure in school work, on the basis of reading difficulty, and persistence of immature behavior, with whining, temper tantrums, and other behavior disorders, in a setting of prolonged maternal oversolicitude and faulty training.

Emotional Factors in Gastro-enterologic Disorders (Dr. Sebron Dale): In attempting to speak on this subject, I have nothing original to present, merely a repetition of what has been said numerous times before. However, I am convinced that the failure fully to appreciate and to heed the teaching relative to this subject has resulted in many chronic invalids. Many dollars have been spent for medical care and many healthy organs have been relegated to the incinerator either because we have been ignorant or indifferent. Therefore, even feeble efforts might be justifiable.

We are aware of the physical and chemical factors of disease and spend much time in physical and chemical examinations. We accept as normal, emotional reactions such as weeping when sad. We know that excitement or anger will cause the heart to beat more rapidly, blood pressure to rise, blood sugar to rise. This effect has been shown to be due to increased adrenalin as the result of sympathetic stimulation. It has been shown recently by H. H. Dale and Bunting that stimulation of the vagus causes liberation of acetylcholine. It follows then that emotional disturbances express themselves in effects on the viscera which are innervated by the autonomic nervous system, especially the sympathetic division of that system. Naturally, then one would expect such disturbances to interfere with digestion during this period of overstimulation. This being true, one has only to conceive of a chronic state of such over-stimulation to understand some of the chronic cases of bowel distress.

The relative evaluation of the psychic and somatic components of a patient is of greatest importance in diagnosis and treatment. Many times we find the two associated, with the psychologic factor in the etiology predominating over the physical and chemical factors.

It is perfectly natural, and rightly so, that we should hesitate to diagnose as an emotional factor what might well represent the earliest manifestation of some serious organic disease. To make such a diagnosis is often an admission of defeat and is particularly alarming when we find that someone else has cured our case by removing their gall

stones, or discovered a lung lesion. This concern for the patient's welfare has not been the only factor which has contributed to mistaken diagnoses. The emphasis which has been placed upon organic pathology in teaching has led the average physician to belittle the influence of emotional factors in the production of physical symptoms. This lack of understanding on the part of the general profession has been responsible for an army of psychoneurotics being labeled as cases of organic disease and being constantly mistreated for a nonexistent physical disorder. This does nothing other than to lead more and more to the maladjustment of the patient. An occasional mistake would be made regardless of how good and how careful we were. This usually does no permanent harm to the person with a normal mental background, but to the psychoneurotic or psychotic it will only result in the precipitation or the perpetuation of a disastrous mental condition. Contrary to the opinions of many, any form of substitution therapy is seldom a successful method of psychotherapy, resulting only in relief for a short time or in the transference of the complaint from one system to another.

The psychoneurotic is constantly looking for a prop and very often it is the physician whom he uses. Some psychoanalysts think they often unconsciously seek self punitive measures in the form of surgery because of an unconscious sense of guilt. Karl Menninger in his book "Man Against Himself" speaks of this as polysurgery. Alvarez related an interesting example of a constitutionally inadequate girl who came to him. The diagnosis of her case was obvious, and because he felt sorry for the fine young husband, a mechanic, he purposely avoided a detailed and expensive laboratory workup. The patient was dissatisfied with her treatment and went to another doctor. He was quite chagrined to receive later an uncomplimentary letter from her telling him that she had gone to a good doctor who put her through a score of tests and found that she was in a bad way with a low basal metabolic rate of −14, a beginning diabetes with a blood sugar of 120 mg., a dangerously low blood pressure of 100 mm., a badly dropped colon and a terribly diseased appendix which retained barium for twenty-four hours. She wanted to know how any institution could keep on its staff a man so careless and ignorant. Such measures might not be open to such criticism if they might support her hypochondriasis long enough to permit her eventually to be talked out of her trouble. Such a procedure, however, usually serves only as the prop which these patients are constantly seeking.

The treatment of such conditions would require a volume or even volumes which time does not permit to present. A few common sense principles will, however, be of much value: (1) Gain the confidence of the patient, that is, establish rapport; (2) consider the patient as having a mind and a body as integrated entities instead of a mind and a body as separate entities; (3) realize the influence of the mind in the control of body physiology and even pathology. Realize that there is a mind whose content is concealed and not within the horizon of the everyday conscious scrutiny of patient or physician, and that this unconscious part of the patient plays an important part in the health of the individual. (4) Give proper consideration to the organic factors but give due consideration to the symptoms present which cannot be explained on a purely organic basis. Consider the part that the emotional life can play in the production of such symptoms and attempt to examine the mind as well as the body. (5) Lastly but not leastly, do not attempt to treat the psyche through the soma. Remember that the place for healthy organs is in the body and not in the incinerator.

The Genesis of a Paranoic Reaction, with Case Presentation (Dr. J. W. Bick): Although psychiatry has made considerable advances, the concept of paranoia remains the same. Paranoia is defined by most psychiatrists along lines set forth by Kraeplin late in the last century. We think of it as a fixed type of personality reaction, apparently due for the most part to faulty environmental adjustment and characterized by the preservation of clear and orderly thinking in the presence of a systematized and unshakeable group of delusions. While delusions of persecution, to which we apply the term paranoid, are quite frequent in psychiatric work, it is quite rare that we find this condition existing in the presence of an otherwise clear mental state. It is because of this rarity that I think we are justified in exhibiting this patient. Many physicians admit that they have never seen a clear case of paranoia. Strecker says that the disorder has been diagnosed in but three of five thousand cases in the Philadelphia General Hospital. It is likewise quite rare in the average State Hospital of the United States, being diagnosed in only about 1.9 per cent of cases.

The exact cause or etiology of paranoia is not known. In so far as the anatomic and biochemical findings are concerned, they are entirely within normal limits. We are forced in all cases to fall back upon a personality difficulty or environmental problems for the whole answer. In looking into the history of the patient we are showing tonight, several things are outstanding. This woman is endowed with what we like to think of as a paranoiac constitution, that is, there is a marked tendency towards suspicion, a readiness to see biased meaning, asocial conduct and a tendency to project all personal problems and inadequacies onto the environment, which projections take the form of the delusions we shall see in a few moments. Although outwardly clear, careful study will often reveal a tendency toward rigid thought

—a tendency "to bend the facts" rather than "to bend to the facts." Meyer recognizes several distinct steps in the evolution of such a psychosis, which may be enumerated to advantage, for example: (1) An uneasy, brooding, sensitive type, with an inability to correct ideas and to make concessions; (2) appearance of suspicions and ill-balanced notions; (3) false interpretations, with self-reference, and a tendency to systematization of these erroneous ideas; (4) retrospective falsification; (5) megalomaniac developments.

With these orienting points in mind, we may proceed to a discussion of the findings in this particular case and try to interpret some of the "warped" and persistent beliefs which obsess this patient's thought.

She is a 53-year-old white lady who has been attending the Clinic for about two years, having been referred to us by the Eye, Ear, Nose and Throat Hospital with a complaint of being constantly worried because her husband would desert her and not return. Her husband had been having drinking spells ever since their marriage in 1920, during which he often absented himself during week-ends much to her shame and chagrin. "When he's not drinking, he spends all his time with the Masons. They alone have any control over him. They alone can make him do right. He's a Thirty-Third Degree, you know."

As we shall see later, this is quite an important admission because this patient's inadequacy in handling a difficult marital set-up is being at once transferred to the Masonic group, a group which later shall acquire every bit of her ill will.

The patient was born in Philadelphia, apparently from a one-time well-to-do family. Birth and early physical development were apparently normal. Childhood diseases included measles, mumps and typhoid fever, all of which left no apparent sequelae. She has an excellent school record, completing high school and later attended a school of "Art and Design." She admits of no antisocial traits but states that she "always wanted to rebel over what they wanted her to do." Perhaps this is her first indication of her failure at adjustment which later was destined to bring her such untold grief.

Sex adjustment has been poor. She reacted to menstruation, at the age of 16 years, with a nervous breakdown which caused her to remain in bed for three weeks. She was "terrified at the whole affair." She married at nineteen; husband disappeared in the War (1917); married present husband in 1920. She has always wanted children but has been sterile both marriages. She has always been frigid and held sex to some degree of abhorrence. Her religious adjustment is queer, and she claims to be a "Catholic Quakeress." Her husband described her personality by saying that she "has always been too religious, suspicious, fussy, accuses me of everything, and is hard to get along with."

On routine mental examination when first admitted to the Clinic, no significant findings were noted other than a remarkably voluble stream of talk, an apprehensive mood with suspicions toward the Masons and an absence of frank delusions and hallucinations. Most of it has developed in the last two years. She was somewhat suspicious of her husband but there was nothing of a frank delusion. A series of happenings occurred which changed the situation within the last year.

Physical and neurologic examinations were negative, except for a small lesion on the labia majora which the Department of Gynecology says "has the appearance of a small knife-cut."

The patient's financial condition was becoming desperate and she sought aid from her husband's Masonic brother, also from the New York Life Insurance Company, although this was denied. On June 4, 1937, her husband died at Charity Hospital following a cerebral thrombosis. It is here that her attitude toward the Masons begins to crystallize, and it is here that all of her trouble is projected upon the shoulders of those of whom only a short while before she had expressed profound jealousy. Let us look at her scheme of thinking from the time of her husband's death until the present time. (1) "Had a mild stroke—later was recovering; developed headache; the Masons struck him there and speeded off." (2) In the hospital—"Masons had intern transferred; new intern stopped infusions—went steadily downward." (3) "Couldn't wait for him to die. An Eastern Star nurse gave him a hypo; he twisted and breathed his last." "Why all this? To get his Thirty-Third Degree, of course."

One month after her husband's death she reported to the Clinic with her ideas of persecution directed largely to the Mason who inherited the Thirty-Third Degree, and states: "They sprayed my house with lime. It's gotten into my bladder. I'm going blind (eyes are negative). House sprayed with secret Masonic poison." Later she stated, "They are after my character; I've played the game clean; the H. O. L. C. (Masons) want my house for bawdy purposes. Some of them are prominent but one's a crook, another a bootlegger, another a dope addict." She later was back in the Clinic with more stories of a Mr. "X" doing harm to her. "He took my arm to help me across the street, but he will never get me to be his mistress." Afterwards she returned with a complaint that she was going blind, and that she had a pain in bladder and kidneys. All were negative. She stated, "All this pain is due to the fact that the Masons sprayed my house with that lime and it is being absorbed." She was sent to the dentist, and she was suspicious because "the nurse was an Eastern Star member and the dentist a Mason." She states that she "was given too much novocain—numb all over; anesthesia and analgesia persist."

Another event that took place was a street car accident when "a motorman slammed the doors together too quickly; was sent to Charity Hospital overnight but no treatment was given—too many Masons." She knew "the Masons were closing in" on her at every outlet.

She later came to the Clinic stating that she wanted to get spinal manipulations. I explained that we would not go into this. A doctor saw her at the time, and patted her on the shoulder; she wanted to see me; she had a secret to tell me. The secret was that "this doctor had better be looked into." She had the suspicion that he was a Mason also. Another rather interesting megalomaniac idea is that the "Fight is not between Masons and Mrs. M. but between Free Masonry and Catholicism. Masons have ruined everything else; now it's my character."

(The patient was shown here).

In conclusion, you have noted the suspicion, fixed notions and retrospective falsification. The prognosis is quite poor and the dangers in handling such a patient at once become obvious.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR

June 1. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

June 5. Board of Directors, Orleans Parish Medical Society, 8 p. m.
Clinico-pathologic Conference, Hotel Dieu, 8:15 p. m.

June 6. Eye, Ear, Nose and Throat Hospital Staff, 8 p. m.

June 7. Radio Talk, Orleans Parish Medical Society, 8:15 to 8:30 a. m., WDSU.
Clinico-pathologic Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
Hutchinson Memorial Clinic Staff, 8 p. m.
Mercy Hospital Staff, 8 p. m.

June 8. Clinico-pathologic Conference, Touro Infirmary, 8 p. m.

June 12. Orleans Parish Medical Society, 8 p. m.

June 13. Eye, Ear, Nose and Throat Club, 8 p. m.

June 14. Radio Talk, Orleans Parish Medical Society, 8:15 to 8:30 a. m., WDSU.
Clinico-pathologic Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
Touro Infirmary Staff, 8 p. m.

June 16. I. C. R. R. Hospital Staff, 12 noon.
New Orleans Dispensary for Women and Children Staff, 8 p. m.

June 19. Hotel Dieu Staff, 8 p. m.

June 20. Charity Hospital Medical Staff, 8 p. m.

June 21. Radio Talk, Orleans Parish Medical Society, 8:15 to 8:30 a. m., WDSU.
Clinico-pathologic Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
Charity Hospital Surgical Staff, 8 p. m.

June 22. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

June 26. Joint Clinical Meeting, Orleans Parish Medical Society and the United States Marine Hospital at the Marine Hospital, 8 p. m.

June 27. Baptist Hospital Staff, 8 p. m.

June 28. Radio Talk, Orleans Parish Medical Society, 8:15 to 8:30 a. m., WDSU.
Clinico-pathologic Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.

June 29. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

During the month of May, the Society held its regular scientific meeting on May 8, and a special scientific meeting on May 22. At the meeting of May 8, the following program was presented:

The Treatment of Diabetes Mellitus.
By.....Dr. Manuel Gardberg
Discussed by Drs. Chaillé Jamison, Allan Eustis, Alfred Jacoby and closed by Dr. Gardberg.

Acute Spinal Epidural Abscess with Report of Four Cases.
By.....Dr. J. O. Weilbaecher, Jr.
Discussed by Dr. Dean Echols and closed by Dr. Weilbaecher.

The Mortality of Thyroid Disease in a Non-endemic Area: An Analysis of 102 Consecutive Deaths, with a Special Note on the Liver Factor.
By.....Dr. Frederick F. Boyce
Discussed by Dr. Allan Eustis.

The special scientific meeting of May 22 was held jointly with the Tuberculosis and Public Health Association of Louisiana. Dr. Sydney Jacobs, Chairman of the State Early Diagnosis Campaign, had charge of the following program:

Tuberculin Testing in Public Schools.
By.....Dr. Julius L. Wilson

The X-ray in the Early Diagnosis of Pulmonary Tuberculosis.
By.....Dr. Leon J. Menville

Clinical Value of the Early Diagnosis of Pulmonary Tuberculosis.
By .....Dr. Edgar Hull

Dr. Frank Weitz was elected to Active Membership in the Society and Dr. J. Hardee Bethea to Intern Membership.

At the meeting in April of the Louisiana Gynecological and Obstetrical Society, Dr. Henry B. Alsobrook was elected president; Dr. Philips J. Carter, vice-president; and Dr. Earl C. Smith, secretary-treasurer.

The following New Orleans doctors were elected officers of the Louisiana State Pediatric Society: Dr. Philip C. DeVerges, president, and Dr. William C. Rivenbark, secretary-treasurer.

Dr. Ambrose H. Storck sailed April 27 with members of the Surgeons Club on a tour of the clinics of England, Scotland and Scandinavia, and will visit various cities on the continent before returning in two months.

Dr. George W. McCoy represented the United States Public Health Service at the meeting of the National Foundation for Infantile Paralysis, Incorporated, in New York, April 18, and at the meeting of the National Board of Medical Examiners in Washington, April 23. Dr. McCoy also attended the meeting of the American Epidemiological Society in New York, April 28.

The following members attended the meeting of the Federation of American Societies for Experimental Biology in Toronto, April 26-29: Drs. Clyde Brooks and Albert E. Casey.

Dr. H. L. Kearney attended the annual meeting at Alexandria, April 21-22, of the Louisiana Academy of Sciences of which he is president.

Those attending the meeting of the Association of American Physicians, May 2-3, in Atlantic City were: Drs. C. C. Bass, Joseph S. D'Antoni, Grace Goldsmith, William H. Gillentine, John H. Musser, George W. McCoy, and Roy H. Turner.

Dr. Lewis A. Golden presented a paper before a conference on childhood problems in which various social agencies and educational groups participated, April 29.

Dr. Guy A. Caldwell was a guest speaker before the Mississippi State Pediatric Society on May 8.

Dr. Howard R. Mahorner spoke before the American Association for the Study of Goiter, in Cincinnati, May 22-24, and before the Mississippi State Pediatric Society on May 8.

At the recent annual meeting of the Eye, Ear, Nose and Throat Hospital, Dr. Francis E. LeJeune was named surgeon in charge of the ear, nose and throat department; Dr. W. R. Buffington, surgeon in charge of the eye department, and Dr. William B. Clark, assistant surgeon in the eye department.

Dr. Edward H. Cary, Chairman of the Committee on Legal Medicine and Legislation of the American Medical Association, spoke before the National League of Nursing in New Orleans, and also had a conference with the officers of the local and state medical societies.

The following officers were elected April 11 at a membership meeting of the New Orleans Graduate Medical Assembly: Dr. Emmett L. Irwin, president; Dr. Edgar Burns, first vice-president; Dr. Walter E. Levy, second vice-president; Dr. H. Vernon Sims, third vice-president; Dr. Francis E. LeJeune, treasurer; Dr. M. M. Hattaway, secretary, and Dr. H. Theodore Simon, director of clinics. The Executive Committee includes: Drs. Oscar W. Bethea, Ansel M. Caine, Joseph S. D'Antoni, James K. Howles and John H. Musser.

Dr. George F. Roeling has been appointed visiting specialist in neuro-psychiatry for the United States Marine Hospital in Carville, Louisiana.

Dr. Emmett L. Irwin has been named head of the Health and Safety Committee of the New Orleans Area Council, Boy Scouts of America. This committee will plan a program for the education of scouts in safety skill and health practices, and the rendering of service in time of emergency and disaster.

Dr. Béla Halpert has been elected to active membership in the New Orleans Academy of Sciences.

Dr. Albert E. Casey has been elected to membership in the American Association of Anatomists.

The qualifying round of the Orleans Parish Medical Society's golf tournament was held at Colonial Country Club May 1-7. Dr. Dyer J. Farley was medalist with a score of 83 and Dr. William C. Rivenbark was runner-up with 85. Dr. Charles B. Odom was low net with a score of 65 and Dr. Chester Fresh runner-up with 66. About thirty members played in the qualifying round. It is hoped that next year more will enter.

The following is a list of the low 16 who qualified and the pairings for the first round of match play with ¾ difference in handicap. Dr. Charles B. Odom vs. Dr. Francis E. LeJeune; Dr. Howard R. Mahorner vs. Dr. Louis Ochs; Dr. Lawrence R. DeBuys vs. Dr. Herman Weinberg; Dr. Charles A. Bahn vs. Dr. Robert F. Sharp; Dr. Chester Fresh vs. Dr. Roy E. de la Houssaye; Dr. William C. Rivenbark vs. Dr. Edmund L. Faust; Dr. Lucien A. Fortier vs. Dr. Dyer J. Farley; Dr. Ralph J. Christman vs. Dr. Herbert Meyer.

A silver trophy will be awarded the winner of the tournament through the courtesy of Mead Johnson & Company. A pair of sport glasses will be given to the runner-up.

Dr. H. Theodore Simon has been named senior orthopedic consultant and Dr. Guy A. Caldwell associate orthopedic consultant at the clinic for crippled children at Touro Infirmary.

Dr. Marion Souchon was awarded the first prize in the Louisiana Art Commission's First Annual Exhibition which opened May 9 at the Capitol Art Galleries in Baton Rouge. Dr. Souchon recently won an exhibition prize from the New Orleans Art Association.

Dr. Robert W. Cooper has left for New York where he has a special fellowship in radiation therapy at the Memorial Hospital.

The following members were on the program of the joint meeting of the Louisiana Gastroenterological Association and the Marine Hospital: Drs. Donovan C. Browne, Isidore Cohn, George F. Fasting, Waldemar R. Metz, John H. Musser, Alton Ochsner, and James M. Perret.

Dr. Francis E. LeJeune, President of the Louisiana-Mississippi Otolaryngological Society, presented a paper at the annual meeting, May 8, at Gulfport. That same day he flew to Chicago to a council meeting of the American Laryngological, Rhinological and Otological Association of which he is Vice-President.

Dr. Alton Ochsner spoke before the Mississippi State Medical Society meeting at Gulfport, May 9, and later attended the meeting of the American Surgical Association in Hot Springs, Virginia, May 11-13.

Drs. C. C. Bass, Michael E. DeBakey and Grace Goldsmith took part in the program of the Society of Experimental Biology and Medicine, May 12.

The following members of the Society attended the meeting of the American Medical Association in St. Louis, May 15-19: Drs. Charles A. Bahn, Charles C. Bass, Elizabeth Bass, George C. Battalora, Merrill C. Beck, Hardee Bethea, Oscar W. Bethea, Frank Brostrom, Wiley R. Buffington, Guy A. Caldwell, Michael E. DeBakey, Lawrence R. DeBuys, Theodore J. Dimitry, D. Julian Graubarth, George H. Hauser, James K. Howles, Sydney Jacobs, Robert A. Katz, Edward L. King, Wilkes A. Knolle, Abraham L. Levin, Urban Maes, Levin W. Magruder, John H. Musser, Alton Ochsner, Charles B. Odom, John T. O'Ferrall, Joseph A. O'Hara, Walter J. Otis, James D. Rives, Isidore L. Robbins, Warren L. Rosen, Thomas B. Sellers, H. Theodore Simon, Earl C. Smith, Edwin A. Socola, Robert A. Strong, Martin T. Van Studdiford, and Willard R. Wirth.

Attending the meeting of the American Association of Clinical Pathology in St. Louis, May 12-14, were Drs. George H. Hauser, Edwin H. Lawson, Emma S. Moss, and John R. Schenken.

Drs. Maxwell E. Lapham and Wilbur C. Smith attended Tulane alumni meetings in Little Rock, Hot Springs and Fort Smith, Arkansas.

Dr. J. M. Batchelor addressed the Louisiana Federation of Women's Clubs, May 14, on the work of the public health department.

Dr. Charles F. Gelbke was the speaker at the first public Mother's Day ceremonies held in Algiers, May 14.

Dr. Charles Odom attended the Forum of Anesthesia, held in connection with the A. M. A. meeting in St. Louis.

TREASURER'S REPORT

Actual Book Balance 3/31/39	$5,089.69
April credits	$ 813.89
Total credits	$5,903.58
April expenditures	$ 950.94
Actual book balance 4/29/39	$4,952.64

LIBRARIAN'S REPORT

The Library has loaned to physicians during April, 1,027 books and periodicals, or approximately two to each member of the Society. In addition 1,177 volumes have been loaned to students for overnight use, giving a total of 2,204 for the month.

During April 137 volumes have been added to the Library. Of these 32 were received by binding, 94 by gift, 10 from the New Orleans Medical and Surgical Journal and one by purchase.

Members of the staff have collected material on the following subjects during the month:

Typhoid carriers
Tuberculosis of the tongue
Migraine
Mental responsibility for suicide
Infection of the salivary glands
Osteomyelitis of the pelvic bones
Basal metabolism in pregnancy
Anaphylaxis and histamine
Hypospadias
Hyperglycemia without glycosuria

This notation does not include the great number of reference questions which are answered at once by consultation of a reference book or by the use of the card catalog.

NEW BOOKS

First International Congress on Mental Hygiene: Proceedings, 1932.

American Laryngological, Rhinological and Otological Society: Transactions, 1938.

American Neurological Associations: Transactions, 1938.

American Urological Association: Western Branch Transactions, 1938.

American Pediatrics Society: Transactions, 1938.

U. S. Public Health Service: Annual Report of the Surgeon-General, 1938.

Rockefeller Foundation: Review, 1938.

U. S. Army: Annual Report of the Surgeon-General, 1938.

U. S. Navy: Annual Report of the Surgeon-General, 1937.

U. S. Census Bureau: Mortality Statistics, 1936.

U. S. Census Bureau: Births, Stillbirths and Infant Mortality Statistics, 1936.

International Congress on Radiology: Portrait Catalogue, 1937.

Genner, V.: By-effects of Salvarsan Therapy and Their Prevention, 1936.

California Medical Association: Cancer Committee Studies, 1936.

Pryll, Walter: Economical Administration of Health Insurance Benefits, 1938.

Whitby, L. E. H.: Disorders of the Blood, 1937.

Williamson, N. B.: Handbook of Diseases of Children, 1936.

Kenny, Elizabeth: Infantile Paralysis and Cerebral Diplegia, 1936.

Meakins, J. C.: Practice of Medicine, 1938.

Barborka, J. W.: Treatment by Diet, 1937.

Norris, G. W.: Diseases of the Chest, 1938.

Gregory, Jennie: A. B. C. of the Vitamins, 1938.

Cowan, Alfred: Refraction of the Eye, 1938.

Brown, G. van I: Surgery of Oral and Facial Diseases, 1938.

Association for Research in Nervous and Mental Diseases: Pituitary Gland, 1938.

Reese, H. H., et al: Yearbook of Neurology, Psychiatry and Endocrinology, 1934-36.

Ranson, S. W.: Anatomy of the Nervous System, 1931.

Achiller, Paul: Brain and Personality, 1931.

Chadwick, F. A.: Foundations of Abnormal Psychology, 1932.

Gilbert C. Anderson, M. D.
Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
East Baton Rouge	Second Wednesday of every month	Baton Rouge.
East and West Feliciana	First Wednesday in June	Jackson.
Morehouse	Second Tuesday of every month	Bastrop.
Orleans	Second Monday of every month	New Orleans.
Ouachita	First Thursday of every month	Monroe.
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	

REPORT OF THE HOUSE OF DELEGATES TO THE GENERAL ASSEMBLY

The House of Delegates held two meetings during the 1939 session of the State Society in Alexandria, one on April 24 and one on April 26. The first meeting was called to order by the President, Dr. Joseph A. O'Hara, who immediately turned the meeting over to the Chairman of the House, Dr. King Rand.

The Committee on the President's Report recommended that the report of the President, which contained the following recommendations be approved, which was so ordered.

"1. Members take full advantage of the official Journal which is not only the medium of disseminating medical and scientific knowledge and information pertaining to the activities of the State Medical Society, but also discusses problems which affect the entire membership. The Journal brings to the door of every individual doctor matters about which he might not otherwise know and about which he cannot afford to remain uninformed. The addition of a staff of corresponding editors in the various parishes has proved very effective.

"2. Each Councilor become a committee of one to make a survey of the physician-power of his respective district and continue to try to organize or reorganize medical societies therein.

"3. Refresher courses in pediatrics, or other subjects, be continued and extended where practicable.

"4. All encouragement be given to the Woman's Auxiliary and that this organization be drafted into service when needed."

The Committee on the Report of the Secretary-Treasurer recommended that this report be received, which was so ordered.

The report of the Council and the reports of the various Councilors were accepted.

Reports of the following committees were accepted: Health and Public Instruction; Journal; Medical Defense; Medical Education; Advisory Committee to Woman's Auxiliary; Care of the Indigent Physician; Medical Economics; Mental Health; To Prepare History of the Louisiana State Medical Society; Expert Testimony.

The following action was taken on other reports: Committee on Cancer—Recommendations, as follows, were approved:

"1. To reaffirm the activities of the Cancer Committee.

"2. To appropriate one hundred dollars ($100.00) for expenses for the year 1939.

"3. That the Secretary-Treasurer write a letter to the newspapers in Alexandria, Bossier City, Lake Charles, Monroe, New Orleans and Shreveport which have published articles on cancer control and to the radio stations in Alexandria, Lake Charles, Monroe, Baton Rouge and New Orleans which have given time for radio talks on cancer, thanking them for their cooperation. It is also recommended that a letter of thanks be sent by the Secretary-Treasurer to Dr. J. A. O'Hara, President of the Louisiana State Board of Health, for the donation of space in the Journal for the publication of monthly articles on the subject of cancer."

Committee on Hospitals: Supplemental report, containing resolution concerning prevention of abuse in connection with admission of patients to the Charity Hospital in New Orleans and the original report of the committee, were adopted. The Committee was empowered to proceed and formulate proper rules for the admission of patients as requested in the resolution submitted.

Committee on Maternal Welfare: The following recommendation was approved:

"That the work of the Maternal Welfare Committee be continued and that such a committee be appointed by the incoming President for 1939-1940."

Committee on Public Policy and Legislation: The Chairman recommended that, when the funds of the State Society are in such a condition as to justify it, a representative of our organization be maintained in Washington in the interest of medical legislation, especially during the legislative session in Washington, which recommendation was approved. The Committee was also empowered to employ some attorney or anyone they may see fit, to scrutinize and read each and every bill as introduced at the State Legislature and report to the Committee any reference to the practice of medicine in the state.

Committee to Study Ways and Means of Establishing a Library Service: The report of this Committee was accepted; however, the Secretary-Treasurer advised that, at the last meeting of the Executive Committee, motion was made and carried that this subject be tabled.

Committee on Walter Reed Memorial: Motion was made and carried that this report be referred to the Committee appointed by the Executive Committee, for consideration with the Committee on Walter Reed Memorial and that a report be made back to the Executive Committee for final action.

The report of the Louisiana State Board of Medical Examiners was accepted and the names of Dr. Roy B. Harrison and Dr. W. D. Phillips were approved for submission to the Governor for appointment at the expiration of the present term of Dr. Harrison's appointment.

Dr. A. E. Greer of Houston was in attendance at the meeting as Fraternal Delegate from the Texas State Medical Association.

A communication from Dr. William C. Woodward of the American Medical Association in regard to appropriation for the construction of a new building for the Army Medical Library and Museum was presented and accepted.

A letter from Dr. P. W. Trowbridge, a dentist, requesting that the State Society approve endorsement of the Girl and Boy Scouts' Manual for display in doctors' waiting rooms and that the members be requested to have these manuals in their offices was presented. Motion was made and carried that the Councilors review these manuals and, if there is not found anything objectionable in same, they could recommend to the Executive Committee that the members be asked to use these in their waiting rooms.

Request was received from the doctors of Plaquemines Parish for a Charter and it was the opinion of the House that this Charter should be granted after the members have complied fully with the laws of the State Society.

The recommendation of the Budget and Finance Committee that the By-laws be amended so that fifty cents per capita paid each year to the entertainment fund and to the medical defense fund should not apply to dues collected from intern members was approved.

A resolution concerning compensation cases, with special reference to patients choosing their own physician, was presented and referred to the Legislative Committee.

Motion was made and carried that expenses of delegates to the American Medical Association for attending meetings of the House of Delegates of the American Medical Association should be defrayed by the Society, if the Budget and Finance Committee can find the funds.

A recommendation that the abstracted minutes of the meeting of the House of Delegates and the meetings of the Executive Committee be published with the printed reports of officers and committees, before the annual meetings, was approved.

A telegram from Dr. West, Secretary of the American Medical Association was read, wherein it was requested that the House of Delegates of the State Society use their influence in having the time of the committee hearing of the Wagner Bill deferred. Action had been taken, it was stated, in this matter by communicating with Senator Allen J. Ellender and the Senator had complied with the request.

The amendments to the Charter and Constitution providing that the Vice-Chairman of the House of Delegates should be a member of the Executive Committee were approved by ballot taken by the members registered.

The report of the Committee on Resolutions, expressing thanks to various individuals and organizations for cooperation and interest in the meeting, was approved.

The following officers and committees were nominated and duly elected:

President-elect: Dr. C. Grenes Cole, New Orleans.

First Vice-President: Dr. D. B. Barber, Alexandria.

Second Vice-President: Dr. E. L. Zander, New Orleans.

Third Vice-President: Dr. J. P. Mauboules, Rayne.

COUNCILORS

Third District: Dr. C. C. deGravelles, New Iberia.

Sixth District: Dr. Rhett McMahon, Baton Rouge.

Seventh District: Dr. Claude A. Martin, Welsh.

Eighth District: Dr. W. F. Couvillion, Marksville.

COMMITTEES

Scientific Work: Dr. P. T. Talbot, Secretary-Treasurer; Dr. A. E. Fossier and Dr. F. E. LeJeune.

Public Policy and Legislation: Dr. C. A. Lorio, President; Dr. P. T. Talbot, Secretary; Dr. C. Grenes Cole, Chairman; Dr. H. B. Alsobrook and Dr. Rhett McMahon.

Journal: Dr. J. A. Lanford, three year term; Dr. H. W. Kostmayer, two year term (unexpired term of Dr. Seemann).

Medical Defense: Dr. J. C. Willis, Sr., three year term.

Health and Public Instruction: Dr. F. R. Gomila, Chairman; Dr. D. T. Martin, Dr. M. H. Foster, Dr. J. Q. Graves and Dr. J. K. Griffith.

Hospitals: Dr. J. T. Nix, Chairman; Dr. A. J. Comeaux, Dr. O. P. Daly, Dr. J. L. Scales and Dr. J. E. Walsworth.

Delegate to the American Medical Association 1940 and 1941: Dr. J. Q. Graves, Monroe.

Alternate to Delegate to American Medical Association 1940 and 1941: Dr. J. B. Vaughan, Monroe.

Alternate to Delegate to American Medical Association 1939 and 1940: Dr. Cassius L. Peacock, New Orleans.

Chairman of House of Delegates: Dr. King Rand, Alexandria.

Vice-Chairman of House of Delegates: Dr. Val Fuchs, New Orleans.

Invitation to hold the 1940 meeting in New Orleans was accepted.

Respectfully submitted,

P. T. Talbot, M. D.,
Secretary-Treasurer.

REPORT OF COMMITTEE ON MEDICAL DEFENSE

The Committee on Medical Defense wishes to report that there have been three cases submitted for defense since the time of the report made to the 1938 meeting of the House of Delegates.

The first was a threatened suit against a member residing in New Orleans. The material in this case, received in November, 1938, after being reviewed by the Committee was presented to our attorney who advised us in December that he had filed, within proper legal delays, exceptions and if these were determined adversely to the doctor, he would then file an answer. Up to date there has been no need for further action in this case.

In February, 1939, the Committee received, from the Rapides Parish Medical Society, a request that one of their members be defended in connection with a pending suit. The facts in this case were reviewed by the Committee and we were of the opinion that the doctor in question should receive defense and the attorney was notified accordingly.

The third case submitted for consideration and defense was received in March of this year, wherein it was stated that a member of the society from Bogalusa desired defense. The material, as submitted, has been reviewed by the members of the Committee; it is our opinion that this doctor is entitled to defense and we have so advised our attorney.

Attached to the original report is a financial report of the Medical Defense Savings Account for 1938 and also a list of the securities held in the Trust Department of the Whitney National Bank for the Medical Defense Fund, as of December 31, 1938.

Respectfully submitted,

S. Chaillé Jamison, M. D.,
Chairman.

REPORT OF COMMITTEE ON RESOLUTIONS

The Committee on Resolutions feels that the 1939 meeting of the State Medical Society has been a most successful one and that this has been

due in large measure to the splendid cooperation and assistance by the following to whom we wish to express our sincere thanks and appreciation:

The Hotel Bentley, management and personnel, for use of the entire facilities of the hotel and generous contribution of the lobby and meeting rooms, all without charge.

Mr. Coleman J. Hudson, Manager of the Bentley Hotel, and his secretary, Miss Canada, for their suggestions and cooperation.

Honorable V. V. Lamkin, Mayor of Alexandria, and Commissioners Bringhurst and Bradford for donating City Hall Auditorium for meeting of medical section; for the use of the City Park Auditorium for the luncheon, together with preparing tables and other assistance, and detailing policemen for special duty.

Commercial exhibitors for their generous and wholehearted cooperation.

The local Committee on Arrangements for splendid handling of the meeting.

Woman's Auxiliary of the Rapides Parish Medical Society for their cooperation in decorating the meeting rooms, lobby of the hotel and guests' rooms; assisting with entertainment and providing pages.

Merchants of Alexandria for welcome and cooperation.

Advertisers in the annual program.

Girl Scouts of America for pages.

Louisiana College for students to assist at registration desk and in operating lanterns at scientific and open meetings.

Bus drivers of Central Grammar School for cooperation in providing transportation to and from luncheon.

Rapides Packing Company for planning luncheon.

Chamber of Commerce for securing necessary extra rooms for guests.

Reed's Typewriter Exchange for use of typewriters.

Mr. Charlie Moore for loud speakers and sound equipment at the City Hall Auditorium.

The Town Talk for generous contribution of publicity of the meeting and especially to the Editor, Mr. Rollo Jarreau.

The New Orleans papers for contribution of publicity.

Your Committee recommends that a copy of these resolutions be incorporated in the minutes of the meeting, a copy be given to the press, and a copy be given to the New Orleans Medical and Surgical Journal.

Respectfully submitted,

C. L. Peacock, M. D.,
Chairman.
C. P. Rutledge, M. D.
Walter Moss, M. D., (Absent).

PAST PRESIDENTS' DINNER

The past presidents of the Louisiana State Medical Society held their tenth annual dinner at the Bentley Hotel, Alexandria, on Monday, April 24, 1939. The president, Dr. Matas, fourteenth president of the State Society, presided. Dr. R. O. Simmons, veteran surgeon of Alexandria, was the host. All but five of the 23 living presidents answered the roll call of the secretary, Dr. Roy Harrison, namely: R. Matas (1894-95), R. O. Simmons (1911-12), F. J. Mayer (1913-14), Geo. S. Bel (1914-15), J. C. Willis, Sr. (1915-16), Jos. E. Knighton (1921-22), L. J. Williams (1923-24), A. A. Herold (1927-28), L. J. Menville (1928-29), S. C. Barrow (1931-32), R. B. Harrison (1932-33), C. A. Weiss (1933-34), C. Jamison (1934-35), C. P. Gray (1935-36), H. W. Kostmayer (1936-37), C. M. Horton (1937-38), J. A. O'Hara (1938-39), and the president-elect, Clarence Lorio.

Two reprints giving the chronology and history of the Past Presidents' advisory board, created officially on April 16, 1931, were presented to each one of the guests with the compliments of the president, who included his recent Esculapian ex libris as an added souvenir of the occasion. A feeling tribute was paid by the president to the memory of the late Dr. W. H. Seemann, whose absence was indicated by a vacant seat at the table and a beautiful bunch of roses over his plate. A very fitting resolution memorializing all the deceased presidents, submitted by Dr. Fred J. Mayer, of Opelousas, was unanimously adopted as read and ordered spread upon the minutes. Drs. Whyte Glendower Owen, Whitecastle, and R. O. Simmons, Alexandria, were elected respectively first and second vice-presidents.

At the close, the president reminded the company that though this was the fifth meeting held by the State Society in Alexandria since 1887, it was the first annual dinner held in this hospitable city. Rapides Parish, one of the greatest contributors to the organization of the State Society, and one of the largest parishes in its membership, has furnished the Society with six of its presidents, of whom Dr. Simmons is now the only survivor. The others were: Josiah Hale (1849), first president of the first Louisiana State Medical Society, J. P. Davidson (1883-84), C. J. Owens, Eola, (1889-91), Clarence Pierson (1917-18), and E. L. Henry (1919-20). It was likewise in Alexandria, in 1908, that the House of Delegates was created at the suggestion of President Dowling.

The president referred to many events which occurred during President Simmons' administration which had made the meeting over which he presided in New Orleans in 1912 important in the history of the organization by the memorial services dedicated to Dr. Chaillé. Incidentally he noted that Dr. Simmons had performed the first appendectomy in Rapides Parish on April 16, 1896, one of the earliest in the state. Following the lauda-

tory remarks, a toast was drunk to Dr. Simmons, the Nestor of the medical profession in Rapides, pioneer builder in the medical organization of his parish and the state, champion of the highest ideals of the profession, and the beloved of his people; to all of which Dr. Simmons replied with a very eloquent and touching response.

LOUISIANA STATE MEDICAL SOCIETY GOLF TOURNAMENT

	Gross	Net
Dr. A. R. Morgan	82	74
Dr. E. H. Lawson	85	75
Dr. C. B. Odom	86	65
Dr. C. P. Rutledge	87	69
Dr. J. H. Musser	88	73
Dr. P. C. DeVerges	89	69
Dr. Val H. Fuchs	90	77
Dr. Adolph Mangham	91	75
Dr. Leon J. Menville	94	74
Dr. Harry Meyer	96	76
Dr. Chaillé Jamison	97	73
Dr. M. D. Hargrove	98	73
Dr. Jack Strange	98	80
Dr. Allan Eustis	99	77
Dr. W. C. Rivenbark	99	83
Dr. John Elliott	104	80
Dr. J. P. Leake	105	90
Dr. Charles M. Horton	107	82
Dr. E. L. King	110	85

No skeet shoot was held on account of lack of interest.

SIXTH DISTRICT MEDICAL SOCIETY

At the annual meeting of the Sixth District Medical Society held at Our Lady of the Lake Sanitarium, Baton Rouge, on Thursday, April 13, the following resolution was adopted:

Dr. W. H. Brent — Dr. R. C. Kemp
Dr. J. W. McGehee — Dr. J. B. Sewell
Dr. W. D. Wall

Whereas, God in wisdom has removed from the Medical Fraternity the above named doctors, members of the Sixth District Medical Society, whose presence will be missed and mourned by its members, and

Whereas, The doctors were an inspiration and guide to its members, always wisely and diligently working for the advancement of medicine and willingly and cheerfully giving much of their time to relieve the ills and physical sufferings of mankind. Their interest in scientific medicine never waned during the many years they were privileged to practice their chosen profession;

Therefore, be it Resolved, That this society extend to their bereaved widows and families our deepest and sincerest expression of sympathy in the death of the above named doctors, who were members of the Sixth District Medical Society, and

Be it further Resolved, That a copy of this resolution be sent to each widow, and a copy spread upon the minutes of the Sixth District Medical Society.

E. M. Robards, M. D., Sec.

OUACHITA PARISH MEDICAL SOCIETY

The regular monthly meeting was called to order on May 4 at 7:30 p. m. by Dr. John Pracher, president.

The scientific program was as follows: The first paper entitled "Postoperative Thrombophlebitis" was read by Dr. George W. Wright. Discussion ensued by Drs. Wood, Gray, Sr., Vaughan and Pracher. The second paper was on "Treatment of Foreign Bodies in the Eye." Discussion was opened by Dr. Titche.

A motion was made by Dr. Gray, Sr., that the society entertain the auxiliary on May 24, that the society should furnish the entertainment, and that all details should be left in the hands of the Entertainment Committee. Motion was seconded and carried.

Dr. Pracher appointed the following committee to conduct the A. M. A. Survey: Drs. Titche, Wood and Flinn.

Application for membership was received from Dr. Wood H. Scott and was referred through the usual channels.

L. L. Titche, M. D., Sec.

LOUISIANA GASTROENTEROLOGICAL SOCIETY

The Louisiana Chapter of the National Gastroenterological Association held a joint meeting with the Marine Hospital Staff on Thursday, March 23, 1939.

The program was excellent, headed by Dr. Julius Bauer, whose subject was "Gastric Ulcer," which he considers a biologic inferiority of the gastrointestinal tract, follows Mendelian recessive characteristics, and constitutional traits. Charts showing hereditary tendency of peptic ulcer were complete and exhaustive in their demonstration of familial susceptibilities. If both parents are healthy, 11 per cent of the offspring may show peptic ulcer; if one parent suffers from ulcer, 25 per cent of the offspring suffer. Families of ulcer patients are all subject to gastrointestinal disorders, which may be a simple neurosis, ulcer or carcinoma. Neoplastic tendencies also play a part. Further proof was shown by the chart that, if an ulcer patient is from a cancer family and is not cured, he suffers a possibility of cancer to a marked degree. Interesting discussion was headed by Dr. Musser, followed by Drs. Browne, Perret and Pasternak.

"Surgical Aspects of Ulcerative Colitis" was the

next paper, and was read by Dr. Alton Ochsner, who stressed especially the surgical treatment which heretofore could be considered mostly failures, except for the relief of massive hemorrhage, cicatrization or perforation, and then the results are as a rule discouraging. The mortality is excessive because the cases are surgical derelicts, so to speak, seeking surgery as a last resort. The etiology of the disease is hazy, with pathology starting in different parts of the bowel, and persistent recurrence after removal of considerable portions increases the difficulty of standard procedures. Short circuiting, ileocolostomy, to total colectomy in selected cases, and three stage operations were reviewed, preceded by a careful preoperative schedule of water balance maintenance, transfusions, implantations of *Bacillus acidophilus* and other means to influence the intestinal flora.

Dr. Perret reviewed the history of a patient who after a stormy surgical routine apparently recovered and continues well. Further discussion by Drs. Metz, Browne and Fasting brought out the fact that since organized research has been done, the subject is still a medical blank: The etiology may be digestive, bacterial, virus, vitamin or allergic; additional use of sera, vaccines, neoprontosil is recommended to complete the therapeutic armamentarium, for surgery has little to offer.

Dr. Isidore Cohn spoke of some of his reflections on "Surgery of the Gallbladder and Biliary Tract," and, after years of extensive work in this field, concludes that calcium salts are not recommended for jaundiced patients; the surgeon should be expertly acquainted with the anatomy and variations of the tract; cholecystitis is common in all adults, even 25 to 50 per cent will have stones, numerous of which are silent; biliary disease has an effect on surrounding organs; there are changes in the metabolic and detoxicating powers of the liver.

The diagnosis is usually made by intermittent pain in the right hypochondrium, digestive disturbances, jaundice, which of course must be differentiated from hemolytic jaundice. Painless jaundice must not necessarily be considered as carcinoma. Surgery is not recommended for every case of acute cholecystitis, though the acute attack is usually an acute manifestation of a chronic pathologic process; during periods of quiescence the best end results are accomplished; prolonged medical treatment is not beneficial either.

Dr. W. L. Smith of the Marine Hospital Staff cited cases with undemonstrable pathology, but with clinical pictures of gallbladder disease; functional disorders such as slow emptying gallbladders, and discoursed on extrinsic interference such as gastric ulcers, spastic colon, pancreatitis, either preceding gallbladder pathology or succeeding it, influenced by diseased bile resulting from infection or other disorders. Possible biliary dyskinesia, spasm of sphincter of Oddi, atonic gallbladders, and external interference with bile flow can be hypothesized when we are confronted with any gallbladder disturbance.

Corrective measures should begin with an intensive study of the patient himself, as most cases are overweight and digestive disturbances a great factor; surgery is recommended if acute, and preoperative treatment if chronic. Poor operative risks are candidates for medical treatment only; silent stones should be removed after proper preparation. All chronic gallbladders should be removed or drained as all are potential cases of pancreatitis. Dr. Bauer in closing stressed the study of the patient, his personality, nervous manifestations and all factors intimately connected before surgery, and a better understanding of silent gall stones, which though not always considered surgical, may be present for years, then suddenly give trouble directly traceable, or vague complaints not traceable to other sources.

P. L. Querens, M. D., Sec.

NEWS ITEMS

The regular monthly meeting of the Medical Staff of Touro Infirmary was held Wednesday, May 10, at 8 p. m. The first order of business was a clinico-pathologic conference by Dr. John A. Lanford. Following this, Dr. I. M. Gage gave a case report on Arteriovenous Aneurysm with Pseudo-arterial Aneurysm of Femoral Vessels. The last communication of the evening was that of Dr. M. C. Wilensky on Sight Saving Measures, with the presentation of a case.

A two weeks course in electrocardiography is being offered at the Michael Reese Hospital in Chicago, August 21—September 2, 1939, by Dr. Louis N. Katz.

Dr. W. A. Bastedo, President of the United States Pharmacopeial Convention has issued a call for the Convention for the Revision of the Pharmacopeia of the United States of America to meet in Washington, D. C., on May 14, 1940.

Scientific sessions of the fourth annual convention of the National Gastroenterological Association will be held June 1 and 2 at the Squibb Hall in New York City.

Preliminary programs of the Section on Public Health and the Section on Medicine of the coming Congress on Obstetrics and Gynecology, meeting in Cleveland September 11-15, have been issued.

At the meeting of the Louisiana State Pediatric Society in Alexandria, Louisiana, on April 24, 1939 the following officers were elected for the ensuing year: Dr. Philip C. DeVerges, president; Dr. Ralph Talbot, vice-president; Dr. W. C. Rivenbark, Secretary-treasurer.

Vanderbilt University Medical School announces a graduate course in internal medicine which will extend over a period of one year available to those who have completed an internship. The tuition fee will be $300. Three fellowships are also available in this course.

The American Public Health Association has recently adopted five reports dealing with Educational Qualifications of Public Health Statisticians, School Health Educators, Public Health Engineers, Sanitarians, and Sub-professional Field Personnel in Sanitation. These reports are distributed free of charge in the hope that they will serve a useful purpose in raising the educational standards of professional public health personnel. Copies may be secured from the Book Review Service, American Public Health Association, 50 West 59 Street, New York City.

The first American Congress on Obstetrics and Gynecology is to be held in Cleveland, Ohio from September 11-15, 1939. This important meeting comes at a crucial time in American medicine. The problems associated with human reproduction have become of paramount importance, arousing the intense interest of the public and profession. This meeting will provide the first opportunity for all the interested groups of workers to assemble together. Doctors, nurses, hospital administrators and public health workers will meet and discuss their mutual problems and correlate their many ideas. A large and representative attendance is necessary to assure the success of this meeting. Already more than 1400 advance registrations have been received.

The twenty-fourth annual meeting of the American Association of Industrial Physicians and Surgeons with the American Conference on Occupational Diseases and Industrial Hygiene will be held at the Hotel Statler, Cleveland, Ohio, June 5, 1939. A program of timely interest and importance will be presented by speakers of outstanding experience in all of the medical and engineering problems involved in industrial health. A cordial invitation is extended to all whose interests bring them in contact with these problems. Further information may be obtained from A. G. Park, Convention Manager, 540 North Michigan Avenue, Chicago.

The sixty-third annual convention of the American Association on Mental Defect was held at the Palmer House in Chicago, from May 3-6 inclusive.

Dr. W. Marvyn Johnson, of Monroe, was recently elected president of the Louisiana State Ophthalmological and Otolaryngological Medical Society.

Among the members of the State Medical Society attending the recent meeting of the American Medical Association in St. Louis were: Drs. P. D. Abramson, W. H. Browning, H. G. F. Edwards, F. G. Ellis, C. R. Gowen, M. D. Hargrove, J. A. Hendrick, A. A. Herold, C. L. LaRue, W. R. Mathews, T. M. Oxford, C. P. Rutledge, J. R. Stamper, C. H. Webb, all of Shreveport; F. C. Bennett and J. Q. Graves, Monroe; B. E. Spencer and V. E. McMains, Sterlington; M. R. Green, J. B. Harris, J. H. Wells, S. L. White, Ruston; L. A. Hebert and G. C. McKinney, Lake Charles; J. J. Ayo, Jackson; T. A. Dekle, Jonesboro; Charles Sentell, Minden; J. L. Danos, Thibodaux; Rhett G. Korniker, Ponchatoula; B. B. Lane, Jr., Zachary; John Pugh, Cotton Valley; T. B. White, Plain Dealing. New Orleans' physicians in attendance at the meeting are listed in the transactions of the Orleans Parish Medical Society.

SOUTHERN BAPTIST HOSPITAL

The regular monthly meeting of the Clinical Staff of the Southern Baptist Hospital was held Tuesday, May 23, in the Staff Room of the Hospital at 8:00 p. m. The following interesting program was presented: "Dehydration Therapy of Pneumonia" by Dr. L. C. Chamberlain; "Serum Treatment of Pneumonia" by Dr. Sam Hobson; "Sulfapyridine in the Treatment of Pneumonia" by Dr. P. H. Jones.

INFECTIOUS DISEASES IN LOUISIANA

Dr. J. A. O'Hara, epidemiologist for the State of Louisiana, has furnished us with the weekly morbidity reports for the state, which contain the following information: For the week ending April 22, the sixteenth week of the year, there were listed 206 cases of measles, 156 of syphilis, 119 of hookworm, 46 of pneumonia, 42 of pulmonary tuberculosis, 36 of whooping cough, 34 of chickenpox, 21 of gonorrhea, 16 each of scarlet fever and cancer, 15 of influenza, 13 of typhoid fever and 11 of diphtheria. For the following week, measles, with 141 cases, again led the list of reported diseases, with the following reported in numbers greater than ten: 136 cases of syphilis, 48 of pneumonia, 38 of gonorrhea, 28 of pulmonary tuberculosis, 23 of whooping cough, 21 each of cancer and influenza, 20 of scarlet fever, 13 of typhoid fever and 10 of chickenpox. One case of poliomyelitis was reported in Orleans Parish. Six cases of tularemia were listed, 2 each from Red River and Tensas, and one each from Bienville and Livingston. For the week ending May 6, there was an enormous increase in syphilis, which jumped to 355 cases all told. Following in order of frequency were 92 cases of measles, 47 of pneumonia, 30 of influenza, 25 of pulmonary tuberculosis, 20 of cancer, 19 of chickenpox and 13 of

malaria. Of the unusual infectious diseases, one case of tularemia was reported in DeSoto and one case of undulant fever in Orleans Parish. For the week ending May 13, 173 cases of syphilis were listed, followed by 89 of hookworm, 67 of measles, 49 of pneumonia, 36 of pulmonary tuberculosis, 20 of cancer, 19 of gonorrhea, 16 of malaria, 12 of typhoid fever and 10 each of whooping cough and scarlet fever. One case of poliomyelitis was reported from Claiborne and one case of typhus fever from Ascension Parish.

HEALTH OF NEW ORLEANS

The Department of Commerce, Bureau of the Census, reports that for the week ending April 15, there were 137 deaths in the City of New Orleans, of which 85 were in the white and 52 in the negro population. These were very much the same figures as those for the previous week. For the next week there was not much change, 140 deaths being reported, of which 83 were white and 57 negro. Thirteen of the deaths were in children under one year of age. For the week ending April 29, the number of deaths was almost the same as for the week previous and the distribution was almost the same as for that particular week. This week there were 9 nine deaths among small babies. The week that came to a close on May 6 was quite salubrious to the health of the people of New Orleans, only 67 white persons and 49 negroes died. In this week there were 11 deaths in children, 5 white and 6 negro.

WOMAN'S AUXILIARY

Louisiana State Medical Society

President—Mrs S. M. Blackshear, New Orleans.

President-elect—Mrs. Roy Carl Young, Covington.

First Vice-President—Mrs. H. O. Barker, Alexandria.

Second Vice-President—Mrs. C. U. Johnson, Monroe.

Third Vice-President—Mrs. W. P. Bordelon, Lake Charles.

Fourth Vice-President—Mrs. T. E. Strain, Shreveport.

Treasurer—Mrs. W. R. Buffington, New Orleans.

Recording Secretary—Mrs. E. C. Melton, Plaquemine.

Corresponding Secretary—Mrs. C. R. Hume, New Orleans.

Parliamentarian—Mrs. A. A. Herold, Shreveport.

Historian—Mrs. Joseph Bath, Natchitoches.

CONVENTION NEWS

We have here, the report of Mrs. S. Chaillé Jamison, delegate to the State Convention, which was read at the last Orleans Parish Auxiliary meeting. This gives us an excellent picture of the convention, and we are grateful to Mrs. Jamison for her report.

Alexandria, a city new in entertaining the Louisiana State Medical Society, prepared as delightful a program of interesting things to see and do as it has ever been my good fortune to enjoy.

Though it was the first year of an organized auxiliary in Rapides Parish, their maiden effort was a complete success, as I am sure all who attended the meeting will agree. A diversified program of amusements kept us busy each day. We began on Monday afternoon, April 24, with a sightseeing trip over the city and a tour to two lovely gardens, one to "Nosegays", the home of Dr. and Mrs. Fayette Ewing, and the other to the home of Dr. and Mrs. King Rand, where we were entertained at tea. The flowers all over the city were lovely and I am sure most of the decorations used came from the beautiful gardens of our hostesses. So much for Monday.

Tuesday morning we started out with a well attended meeting of the Executive Board of the Woman's Auxiliary, over which Mrs. Ellis, the state president, presided. This meeting was followed by a barbecue at City Park at noon, and a tea at 3:00 p. m. at the residence of Dr. and Mrs. S. J. Phillips on the grounds of the Central Louisiana Hospital at Pineville. That night there was a large banquet in the Venetian Room of the Hotel Bentley, at which the president-elect assumed his duties for the year. This banquet was followed by a dance.

Wednesday morning was devoted to the general meeting of the Auxiliary; sixty-nine members were present. Many interesting reports of auxiliary activities were given, to me the outstanding one being that of the Chairman of Registration, who reported that out of nineteen auxiliaries in the state, members from eighteen registered. At this meeting, the president-elect, Mrs. Blackshear, was inducted into office. A luncheon followed in the Mirror Room of the Hotel Bentley.

Too much cannot be said in praise of the members of one of the newest auxiliaries in the state, who planned and worked together to give us such a pleasant program of entertainment during our sojourn in their hospitable city.

Respectfully submitted,
Mrs. S. Chaillé Jamison,
Delegate from Orleans Parish.

PRESIDENT'S MESSAGE

Dear Auxiliary Members:

It was a great pleasure to renew old friendships and make new friends at the State Medical Society meeting in Alexandria, and it is my hope and plan

to contact all the members personally when I visit the various auxiliaries throughout the coming year.

At the State Convention, where we were so beautifully entertained by the Woman's Auxiliary to the Rapides Medical Society, there was a registration of 171, with eighteen out of nineteen auxiliaries represented. The parishes organized are as follows: Avoyelles, Caddo, Calcasieu, Iberville, Jefferson Davis, Lafayette, Natchitoches, Orleans, Ouachita, Rapides, Sabine, Second District, St. Landry, St. Mary, St. Tammany, Tangipahoa, Terrebonne, Vermilion, and Washington. With your help and cooperation let us make Louisiana 100 per cent Auxiliary!

Louisiana had a full representation at the recent meeting of the Woman's Auxiliary to the American Medical Association, in St. Louis, those present being National Board members, Mrs. A. A. Herold of Shreveport, Chairman of Legislation, and myself as President of Louisiana State Auxiliary. The delegates were Mrs. Paul D. Abramson and Mrs. Frederick G. Ellis of Shreveport, Mrs. W. R. Buffington and Mrs. A. L. Levin of New Orleans, and Mrs. W. A. Smith of Monroe; the alternates were Mrs. C. R. Gowen and Mrs. Clifford P. Rutledge of Shreveport. Mrs. J. Q. Graves of Monroe, Mrs. Wilkes A. Knolle of New Orleans, and Mrs. R. G. Korniker of Ponchatoula, members of the Louisiana group, were in attendance.

The good fellowship and enthusiasm that prevailed at the National Convention was inspiring, and it is my hope that we may live up to the high ideals and achievements of this great organization.

Mrs. S. M. Blackshear,
President.

Respectfully submitted,

Mrs. Edgar Burns,
Press and Publicity Chairman.

BOOK REVIEWS

Plastic Surgery: By Arthur Joseph Barsky, M. D., D. D. S. New York, W. B. Saunders Company, 1938. Pp. 355. Price $5.75.

As the author states in the opening sentence of the preface: "This book is a clinical evaluation of methods, not merely a theoretical discussion."

It is essentially a practical treatise on plastic surgery. Surprisingly complete for a book of its small size, it gives in clear, concise and lucid form the operative approach and methods which have proved most satisfactory in the hands of the author and his colleagues. He draws generously on the experiences of others and does not endeavor to force his own views.

Freely and adequately illustrated it covers not only the principles and technical application, but also the indications for plastic repair.

The various tissues employed in the correction of defects are dealt with in impressive style and their manner of transplantation is well described.

Following these general considerations is the classification of chapters into various sections of the body and their relation to plastic surgery.

In a special field which is fast coming into its own, this excellent book serves a useful and timely need. It is the most complete as well as the most composite of the very small number of publications on plastic surgery in general and will find itself in demand by both the plastic surgeon and the general surgeon. An exhaustive bibliography adds to the importance of the book.

For the purpose for which it is intended it is unhesitatingly recommended.

WALDEMAR R. METZ, M. D.

The Treatment of Fractures: By Charles Locke Scudder, A. B., Ph. B., M. D., F. A. C. S. Philadelphia, W. B. Saunders, 1938. Pp. 1208. Price $12.00.

This is the eleventh edition of a very popular book on fractures. The first edition appeared in 1900 and a comparison of the present edition with the first one available to the reviewer, namely the fourth edition which was published in 1903, shows the remarkable advances in the treatment of fractures during the present century. As a matter of fact, as indicated by Scudder's fourth edition, the treatment of fractures at the early part of this century was in reality very crude. Insecure board splints were frequently used at that time and reduction by skeletal traction then was unknown. Fractures of the hip and thigh were treated with Buck's extension and accessory board splinting.

The eleventh edition of "Treatment of Fractures" by Scudder is a very different type of textbook from the early editions. It is beautifully illustrated. Numerous operative methods are discussed which were seldom or never undertaken in the first part of this century. Consideration of complicated head injuries and of the complications of such fractures as those of the thorax has expanded the field in this volume to include the management of all severe trauma.

It is surprising that the author still retains some illustrations and discussions of methods which are now obsolete; for example, calipers for skeletal traction on the femur and Buck's extension. In addition, however, he does include the modern methods of treatment, e.g., Russell's treatment for

fractures of the shaft of the femur is discussed and the Moore method of pinning is illustrated.

This is one of the most satisfactory of all texts on fractures, and the student or practitioner interested in the subject could not make a mistake in studying this splendid book.

HOWARD MAHORNER, M. D.

An Introductory Guide to Biochemistry: By Sidney Bliss, Ph. D. Philadelphia, W. B. Saunders Co., 1939. Pp. 103. Price $1.25.

This little volume fills a long felt need for bridging the gap between the so-called pure sciences and the apparently more complex medical sciences.

The book comprises thirteen short chapters, completed in sixty-seven pages of interesting reading, dealing with all phases of biochemical processes. The author has studiously avoided the use of structural chemical formulae, which so often constitute a mental hazard to the uninitiated attempting to explore the fascinating field of physiologic chemistry. There has been no attempt to make the book complete from the standpoint of minute detail, but it does contain an adequate amount of detail to render the successive steps in body metabolism clear and logical. Its simplicity contributes to its forcefulness. It should find its place not only with the medical student embarking on the study of fundamental chemical processes which take place in the body tissues, but should appeal in large measure to the layman without benefit of an intensive training in chemistry and physiology, who is interested in learning something of the mechanism of body processes.

SAMUEL B. NADLER, M. D.

Sickness Insurance in Europe: By J. G. Crownhart. Madison, Wis., J. G. Crownhart, 1939. Pp. 134. Price $1.00.

This book contains interesting data with reference to sickness insurance in Europe. Because of the changes which are taking place in American medicine today, it should prove of unusual interest to the physician of this country.

Sickness insurance involves a combination of three services: first, the use of the principle of insurance to purchase protection; secondly, the fact that sickness comes in every life, but is unpredictable as to its extent or relative costs; thirdly, the services of a highly skilled medical profession.

The fifty years of experience in Europe with reference to compulsory health insurance has been unsatisfactory. This form of insurance involves not only supervision but state management.

Its concept has been in the field of labor legislation. Its coverage has been for the great mass of the population abroad in the very low income classifications. Its success in meeting problems of economic insecurity basically rests upon the possibility of including all persons of low income in its scope. The rights to benefits of the legislation arise out of the tax payment of the individuals covered. The government must collect the tax revenues, disburse the money, and employ people for its administration.

Sickness insurance departs from normal insurance experience. The risk is not easily defined. The emphasis cannôt be placed on means to encourage the policy holder not to make claims. There can be no certainty that the premium is adequate or will remain so. The demand for service is influenced by many related factors, and is not susceptible to actuarial computation. The effort of the government is always directed toward confining the service in order that its cost may fall within the limits of the money raised.

What do we insure against? Most of the very serious administrative problems arise from the basic fact that good health and sickness are not susceptible to an exact definition by law and regulation. If the state of good health could be defined, then we would have a foundation upon which we could state that when deviation occurs we have sickness. Actually, good health is very difficult to define. One of the marvels of science is how far a man can deviate from principles of presumed right living and yet not be aware of ill health.

The fact remains that insurance against sickness presents technically important problems differing radically from other forms of insurance protection. Insurance of itself does not provide any more service than that which the insured, through their individual tax premiums, raise money to purchase.

WARREN H. HÉBERT, M. D.

PUBLICATIONS RECEIVED

Paul B. Hoeber, Inc., New York City: End Results in the Treatment of Gastric Cancer by Edward M. Livingston, B.Sc., M.D., and George T. Pack, B.Sc., M.D., F.A.C.S. Manual of Toxicology by Forrest Ramon Davison, M.B., M.Sc., Ph.D.

Insurance Statistical Service of North America, Chicago, Illinois: Standard Bodyparts Adjustment Guide.

Lea & Febiger, Philadelphia: Hypertension and Nephritis by Arthur M. Fishberg, M.D. Clinical Pathological Gynecology by J. Thornwell Witherspoon, M.A. (Oxon); M.D. (Johns Hopkins).

Public Relations Bureau of the Medical Society of the State of New York, New York City: What It Means to Be a Doctor by Dwight Anderson.

Charles C. Thomas, Springfield and Baltimore: Out of the Running by G. Gertrude Hoopes.

Williams & Wilkins Company, Baltimore: Sex and Internal Secretions edited by Edgar Allen. The Genuine Works of Hippocrates translated from the Greek by Francis Adams, LL.D., Surgeon. Clinical Studies in Psychopathology by Henry V. Dicks, M.A., M.D. (Cantab.), M.R.C.P. (Lond.). Preclinical Medicine by Malford W. Thewlis, M.D.

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